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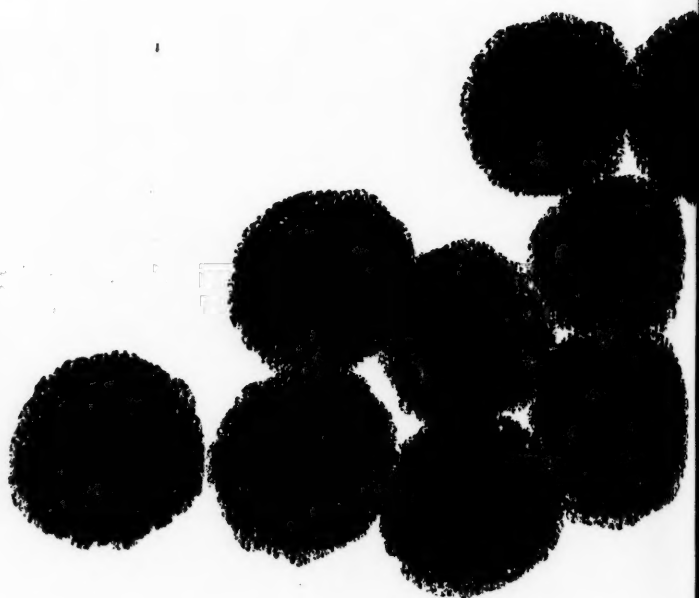
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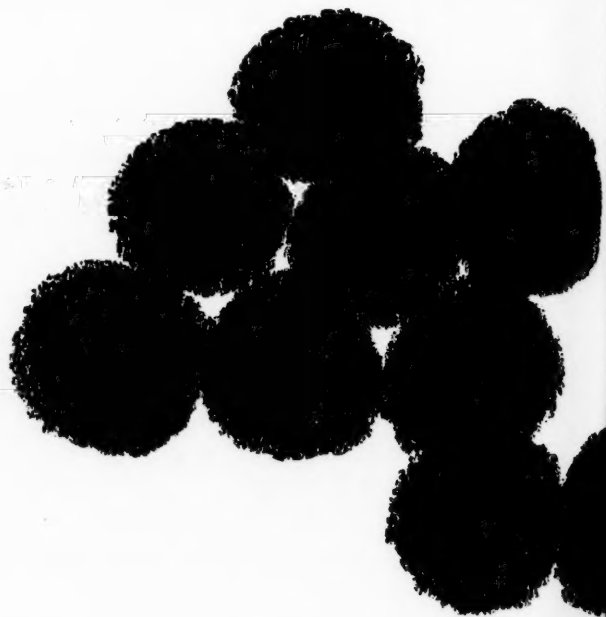
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TABLE OF CONTENTS

	PAGE
THE CLINICAL PROBLEM OF ASEPTIC MENINGITIS, <i>Derek Denny-Brown, M.D.</i>	203
BILATERAL ADRENALECTOMY AND OOPHORECTOMY IN THE TREATMENT OF RECURRENT CARCINOMA OF THE BREAST, <i>Jesse P. Eddy, 3d, M.D., F.A.C.S.</i>	207
THE PROBLEM OF PLATELET TRANSFUSION, <i>Erwin O. Hirsch, M.D.</i>	210
RUPTURED LUMBAR INTERVERTEBRAL DISK SYNDROME CAUSED BY MESTASTATIC DISEASE, <i>David J. LaFia, M.D.</i>	212
15th ANNUAL CONGRESS ON INDUSTRIAL HEALTH, <i>Report of Stanley Sprague, M.D.</i>	218

EDITORIALS

Air Pollution	215
We've Done Our Children Wrong	216
Regional Planning?	216
Representing Medicine	216
Hard to Beat	217
Physicians and the Chamber of Commerce	217

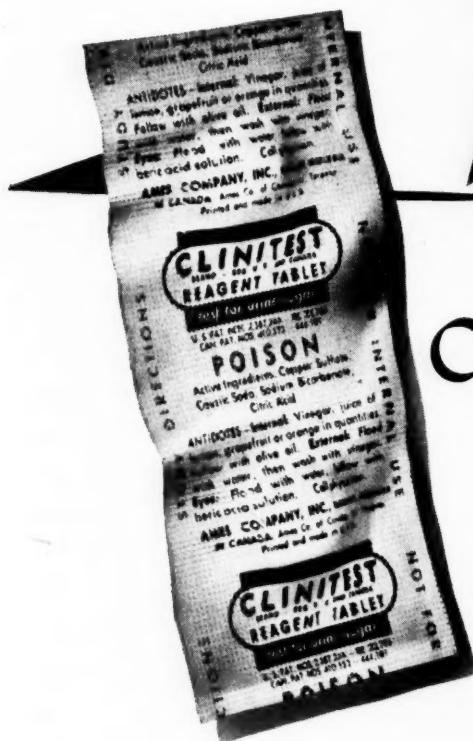
DEPARTMENTS

Annual Meeting Program, R. I. Medical Society	222
District Medical Society Meetings	228
On the Medical Library Bookshelves	230
Book Reviews	236

MISCELLANEOUS

Health Education Broadcasts	226
Index of Advertisers	239

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THE CLINICAL PROBLEM OF ASEPTIC MENINGITIS*

DEREK DENNY-BROWN, M.D.

The Author. Derek Denny-Brown, M.D., of Boston, Massachusetts. James Jackson Putnam Professor of Neurology, Harvard University Medical School; Neurologist-in-Chief, Boston City Hospital.

IN 1905, not long after he had first described the technique of lumbar puncture, Quincke described a series of cases he had encountered where the sole abnormality of the spinal fluid appeared to be an increase in pressure and in amount, the fluid itself remaining clear. This condition he called "serous meningitis," and described both acute and chronic types. The more chronic types were what we should now call chronic hydrocephalus. The most acute types were what we would now call "meningism" or the acute brain swelling associated with acute infections, and possibly some cases of what is now known as "otitic hydrocephalus." In the years since Quincke's observations similar acute often benign syndromes of meningeal irritation were recognized, differing from serous meningitis only in that a small increase in cellular content of the spinal fluid, usually lymphocytes, was often present. These also were called at first "meningitis serosa" on account of the lymphocytic cellular reactions, and were at first confused with tuberculous meningitis, or with lethargic encephalitis, or with abortive poliomyelitis. In 1925, Wallgren distinguished a group of cases of benign illness with headache, vomiting, fever and lymphocytic pleocytosis in the spinal fluid under the title "acute aseptic meningitis." It was not until 1934-35 that this disease was shown to be due to the virus of benign lymphocytic meningitis, which was isolated by Armstrong, Traub, Rivers and others. This condition is now generally known by that name. When the condition is severe up to 30 per cent polymorphonuclear cells may be present.¹¹

Benign lymphocytic meningitis is, however, an uncommon disease, and many more cases of mild

purely or predominantly lymphocytic reaction in the spinal fluid occur from other causes. Likewise, the failure to recover organisms from the spinal fluid, as suggested by Wallgren's word "aseptic," is sometimes found with quite severe cellular reactions in the spinal fluid. The term "aseptic meningitis" has therefore been used to cover a variety of conditions where the common denominator is an increase in cell content of the spinal fluid without the presence of organisms. This type of reaction in the spinal fluid is not uncommon in practice, and raises a number of problems. Such cases are still often labeled "meningism," "lymphocytic meningitis" or "meningo-encephalitis" or "tuberculous meningitis (unproven)," according to the severity of the illness, by those who are unaware of other possibilities.

In this paper it is proposed to discuss some of these possibilities, particularly in respect to some acute and dangerous illnesses the menace of which may be not recognized, or may be obscured by the above descriptive terms, until too late. In order to be sure of our facts we shall use chiefly post-mortem material, for though we have seen many such cases recover, the actual cause often then remains a matter of opinion. Meningeal irritation whatever its cause and primary site, tends to give rise to the same symptoms and signs, namely headache, especially at the back of the head and high in the neck, nausea and vomiting, photophobia, neck rigidity, and spinal rigidity, Kernig's and Brudzinski's signs when severe.

Of neck rigidity it is necessary to point out that simple limitation of the extent to which the head can be flexed forward on the chest is the most common finding. In its minor degrees this can be a very sensitive test. Unfortunately some do not admit the presence of the sign until a stage of board-like rigidity or even head retraction has been reached. This is only present with extreme degree of irritation.

A cellular reaction in the spinal fluid is provoked not only by an infection in or near the meninges, but by any foreign substance, by any superficial inflammatory reaction of the brain or spinal cord, or even by simple ischemic necrosis of brain if it

continued on next page

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From the Neurological Unit, Boston City Hospital, and the Department of Neurology, Harvard Medical School.

is superficial enough. The definition of a "meningitis" from a "meningeal reaction" is therefore purely arbitrary. In general, if the primary cause of a patient's illness is an acute infection in the meningeal spaces one may expect 500 or more cells per cmm. in the spinal fluid, usually more than 1000. A spinal fluid containing only 50 to 200 cells for example indicates that any acute related symptoms are due either to some process near the meninges and not primarily in the subarachnoid space, or that the causative infection of the meningeal spaces has already been walled off by adhesions and is not sampled by lumbar puncture. It is necessary to distinguish sharply between "meningitis" and "meningeal reaction" as a preliminary simplification of our problem. "Aseptic meningitis" for the purpose of this discussion, then, is meningeal irritation, without the presence of organisms demonstrable in smear or ordinary methods of culture. In this regard the level of sugar in the spinal fluid is of special significance, for the presence of organisms is almost universally associated with very low or absent sugar. The exact level of sugar is not important.

The nature of the cellular increase is of special significance. Normally the spinal fluid contains 1 or 2 lymphocytes per cmm. The presence of polymorphonuclear cells, even 1 per cmm., should immediately raise the possibility of either purulent or necrotic lesion. In general the more acute the process, the higher percentage of polymorphonuclears, and the presence of large mononuclears indicates a very chronic process, not necessarily tumor. In general also, virus diseases are associated with a lymphocytic response, but there are exceptions to this, and it is more accurate to say that since few virus diseases lead to massive necrosis a polymorphonuclear response is uncommon.

If the presence of polymorphs in the spinal fluid leads to the conclusion that necrosis is present, the severity of signs of neurological lesion in proportion to the severity of meningeal reaction then indicates whether the necrosis is primarily in the nervous system or in the meninges. Thus in simple cerebral thrombosis or embolism, pleocytosis may be confusing. For example, an eighty-one-year-old cardiac patient entered hospital with a two-day history of loss of speech, confusion, disorientation and mild neck rigidity, with temperature of 105°. The spinal fluid showed 20 rbc, 25 wbc, of which 8 were polymorphonuclears, 1+ Pandy, total protein 75 mg, no growth or culture. The diagnosis was cerebral embolism with meningitis, but autopsy following death from cardiac failure one week later showed only hemorrhagic infarction of the left occipital lobe without meningitis. There was pulmonary congestion, but no other cause of fever. A similar case with infarction of the cerebellar hemi-

sphere showed a CSF pressure of over 300 mm., 3038 rbc and 120 wbc of which 88 were polymorphs, Pandy 2+, and reduction of sugar in second and following tubes. Following massive ischemic necrosis due to carotid occlusion we have seen as many as 2000 polymorphonuclears per cmm. in the spinal fluid for a few days.

In the beginning we mentioned otitic hydrocephalus or "serous meningitis" and differentiated it from "aseptic meningitis" because in the former the cell count in the spinal fluid is not changed. If, however, following otitis media or other sinus disease headache and papilledema are associated with a small cellular increase, up to 50 cells per cmm., and particularly if some of these are polymorphonuclear, in the absence of the dulling and neurological signs that predicate abscess formation, there should be suspicion of two possibilities. Either there is thrombosis of venous sinuses, producing an obstruction to absorption of fluid, and now extending to involve cerebral veins directly, and thus produce necrosis of brain, or an extradural abscess is commencing.

When an upper respiratory or throat infection has been followed within a few days by stupor, paralysis, cranial nerve signs, and a meningeal reaction, most physicians think first of brain abscess. But it is useful to remember that a brain abscess takes many days or weeks to form, and is usually preceded by a stage of invasion, in the form of mild meningeal irritation, headache and lethargy, without paralytic signs, during which the spinal fluid shows only a mild aseptic reaction. But there is a type of case where severe paralysis of one or both sides becomes the prominent feature from the earliest stage, associated with a spinal fluid cell count of up to 4000 polymorphonuclears, without organisms, and sugar of 50 to 60 mg per cent. In such a case the acute necrotizing hemorrhagic encephalopathy described by Adams, Cammermeyer and myself² is likely. It is a type of hypersensitivity reaction in the brain, without organisms, yet is precipitated by an infection such as a streptococcal sore throat, and may be rapidly fatal.

The next most dangerous complication of acute sinus infection, without actual meningitis, is subdural empyema. This is an unusual happening and in my own experience most commonly associated with fulminating frontal sinus disease. Some puffiness of the related orbit is then often an external sign of the frontal osteitis. Drowsiness, stupor, hemiparesis and meningeal reaction then document the intracranial extension. Recently, for example, a fifteen-year-old boy, P. G., developed a sudden severe frontal headache, and several hours later a bout of vomiting. On the second day the headache persisted, with intermittent vomiting, and a shivering chill, and these continued. On the fourth day

the physician was called, gave him penicillin, and sent him to hospital, where he arrived having just had a generalized convulsion, followed by coma. His previous health was non-contributory, except possibly a history of pleurisy at the age of four years. His temperature was then 105°. There were petechiae on the neck, anterior chest, and arms. The ears appeared healthy, the posterior pharynx was infected with purulent streaks. He could respond to simple commands but was stuporous. There was marked neck rigidity, hypoactive reflexes and right extensor plantar response, but no cranial nerve signs and only slight weakness of the right limbs. There was a leucocytosis of 12,250 and lumbar puncture showed an initial pressure of 350 mm., with cloudy fluid containing 480 cells, 99 percent polymorphs, 1+ Pandey, total protein 114, sugar 87 mg, sterile culture. He was treated with penicillin i.v. and sulfadiazine, with fall in temperature to 101.6°, but there was no change in signs. On the third hospital day he suddenly became unresponsive and developed dilated pupils and irregular respiration, and died before surgical intervention could be undertaken. Autopsy showed purulent frontal sinusitis with massive left subdural abscess, due to staphylococcus aureus. The catastrophic fulminating illness in this case was obscured by the entire absence of external signs of the frontal sinusitis. The spinal fluid reaction was separated from the abscess by the arachnoid membrane. In reporting twelve such cases, Kubik and Adams⁶ found cell counts ranging from 15 to over 900, predominantly polymorphonuclear with normal sugar and sterile fluid. Since this condition can be treated successfully by surgical drainage if recognized early enough it is important to bear in mind.

In young children the most disturbing possibility of this kind is lead encephalopathy which is commonly associated with a mild pleocytosis in the spinal fluid. For example, a twenty-month-old child was admitted with a history of a cold two weeks before admission, followed by increasing irritability leading up to vomiting and a series of convulsions two days before admission. Frequent convulsions associated with twitchings of isolated muscles continued after admission. The spinal fluid showed an initial cell count of 58 cells of which 21 were polymorphonuclears, and on later days the cell counts rose at times to as high as 137. The child eventually succumbed to a severe lead encephalopathy on the thirteenth day.⁵

The types of cases I have just discussed are remarkable for the brief duration of illness. To contrast these with typical brain abscess I might summarize the case of a middle-aged man who had a chronic cough for two years, production of copious amounts of sputum, and two episodes of

hemoptysis. For three weeks he had had severe bifrontal headaches, had been mentally dull. He had occasional low fever, showed mild cerebellar signs, early papilledema, and bilateral extensor plantar responses. There was bronchiectasis. The spinal fluid showed a pressure of 320 mm. and contained 101 cells, 17 per cent polymorphs, total protein 91 mg., sugar 90 mg., and chlorides of 717 mg., with negative smear and culture. After many vicissitudes of treatment he eventually succumbed to the effects of a cerebellar abscess. In that story you will note the early clinical evidence of brain lesion, and the much slower evolution of meningeal signs, compared with hemorrhagic necrotizing encephalopathy or subdural abscess.

Another type of aseptic reaction with primary brain damage not uncommonly observed by us, and seldom seriously considered in differential diagnosis is the metastatic disorder of subacute bacterial endocarditis. Thus a man with a history of heart murmur for some years, developed a "cold" with earache and generalized weakness one week prior to admission and developed severe headache on the fourth day of illness and that evening became irrational in behavior and speech. The next morning he was found to have fallen from his bed, unable to rise because of right hemiplegia. On admission he had a temperature of 102°, was completely disoriented and unable to speak coherently, and had a severe right hemiplegia. He had soft systolic and diastolic murmurs in the aortic area and pistol shot murmurs in both arms. There was neck stiffness and positive Brudzinski. The CSF showed pressure 480 mm., 495 lymphocytes, Pandey ++, culture negative. He was treated with penicillin and the third hospital day the spinal fluid showed 20 lymphocytes, 140 polymorphs, and 80 rbc per cmm., sugar 63, total protein 54, chlorides 692. Repeated CSF and blood cultures were negative. Under treatment the CSF cell count dropped to 24 lymphocytes and 0 polys on 35th day. He eventually recovered with a mild residual hemiplegia, but two months later he had a seizure, and then many more, in the course of which he succumbed. Autopsy showed a healing infarct in the left internal capsule, and a fresh mycotic aneurysm with hemorrhage in the right parietal lobe, from subacute bacterial endocarditis.

The remaining acute emergency with aseptic meningeal reaction is acute epidural spinal abscess. A history of backache for some days, with root pains, followed by weakness and sensory loss in the lower limbs, associated with meningeal signs, is typical. Twenty to 700 cells in a sterile spinal fluid and a high protein may be expected. Heusner³ has analyzed a group of such cases observed in Boston City Hospital. The abscess may be from osteomyelitis of the spine, or a metastasis in the

continued on next page

epidural fat from chronic staphylococcal infection. A critical degree of spinal symptoms develops in from five to thirty days and is a true surgical emergency, for unless relieved the abscess creates irreversible damage to spinal cord.

The acute virus infections of the nervous system are all associated with a cellular response in the spinal fluid. This is so whether the disorder is a simple herpes, affecting only one or two nerve roots, is a diffuse encephalopathy such as lethargic or equine or Japanese B encephalitis, or is primarily meningeal as is benign lymphocytic meningitis. Of course the extent of damage to tissue determines the severity of the reaction, but many diagnostic errors will be avoided if the term "encephalitis" is not used unless there is a spinal fluid pleocytosis. Drowsiness is still popularly associated with lethargic encephalitis, but it cannot be too strongly emphasized that drowsiness is associated with any type of diffuse impairment of brain function. Drowsiness without meningeal reaction should lead first to suspicion of acute hydrocephalus, caused probably by brain tumor. Drowsiness with meningeal reaction is caused most commonly by oncoming tuberculous meningitis. In encephalitis, however, the disturbance of vital signs as well as the disorder of awareness appear out of all proportion to the mild meningeal reaction. The virus infections are all acute diseases. You will all be acquainted with the meningeal stage of poliomyelitis, but few realize how similar is the reaction to infection by Cocksackie virus, or by mumps, or even measles.

The Cocksackie group of viruses are grouped into two types A and B, of which group A causes herpangina, and group B usually causes epidemic pleurodynia (Bornholm disease). Recently, however, type B virus has been recovered by Melnick and associates, and others,^{7,8} from patients suffering from an illness characterized by headache, stiff neck, and backache, in addition to symmetrical myalgia, low fever, malaise and nausea. All patients presented meningeal signs, and cellular increase in the spinal fluid running from 22 to 99 cells in the spinal fluid (up to 40 per cent polymorphs), with globulin + to ++. The fever lasted three to ten days, there was no paralysis, and the muscle pains had disappeared within two weeks. This type of illness differs from the usually mild type of meningitis seen with mumps only in the appearance of polymorphonuclears, and in the prominence of muscular aching and tenderness.

Another type of epidemic clinical signs suggesting meningeal reaction with more puzzling features has appeared in many places since 1949. This is "Iceland disease," first described in Iceland in the winter 1948-49,⁹ in Australia in 1949 and 1950,⁸ in New York State in the late summer of 1950,¹² and in England in 1952.¹ This illness also begins

with low grade fever, pain in the neck, and severe muscular pain, but in addition there was numbness, pain and tingling in the limbs and muscular weakness. The illness is unlike poliomyelitis because it tends to occur in winter months, there is no muscular wasting, and loss of sensation and even pyramidal signs may be present. In most of the cases described, the spinal fluid has been normal throughout, but in a few a very small increase in lymphocytes (2 to 8 cells) has been found in an early stage. Finally muscular tenderness in quite large groups of muscles has been commonly present for many months. In most cases neither poliomyelitis nor Cocksackie virus nor their antibodies could be found. In only one case was a poliomyelitis type 3 virus recovered from the stools, and this may have been a coincidence. The cause of Iceland disease is unknown. You will note that the spinal fluid is usually normal, and thus I suspect it is not a nervous system virus infection at all. The following case appears to me to be pertinent: A student nurse age 19 developed a stiff neck one morning in October 1952, with a low fever. The stiffness extended down the back in the following day. The spinal fluid showed no change. After a week of severe neck pain and rigidity, weakness of the right hand and forearm and both thighs developed, with paresthesias and mild loss of sensation in the right hand and left foot, with 4 lymphocytes, a positive Pandy, and protein of 43 mg. per cent in the spinal fluid. The white count in the blood remained around 9,050, with normal sed. rate and X rays of spine. The weakness and sensory changes disappeared after five days but the muscular aching in the neck and mid-dorsal region continued for the next eight months in spite of varied treatments. At that time, when I saw her, there was aching in the upper dorsal spine, and back of the neck, radiating into the arms after exercise, and worse when attempting to bend forward. There were no abnormal neurological signs, but the whole upper dorsal spine was held as rigid as a board. The spinous process of C₆ was a little tender. Careful x-rays of the spine showed a blurring of the posterior intervertebral joints in the region C₅ to about D₄ and finally established the presence of a mild, chronic spondylitis in this region. This has since responded completely to treatment and she was entirely recovered and back at work one year after the onset. Brucella infection was suspected, but agglutination was within normal limits when I saw her. The lesson of this case is that arthritis of the cervical spine in a young person, can closely mimic epidemic myalgia. Another similar nonviral disorder in this category is acute leptospirosis. In a recent case seen by my associate, Dr. Foley, the spinal fluid cell count was 98 lymphocytes at the height of the illness. The liver and myocardial damage should lead to suspicion of this cause.

continued on page 213

BILATERAL ADRENALECTOMY AND OOPHORECTOMY IN THE TREATMENT OF RECURRENT CARCINOMA OF THE BREAST*

JESSE P. EDDY, 3D, M.D., F.A.C.S.

The Author. *Jesse P. Eddy, 3d, M.D., F.A.C.S., of Providence, Rhode Island, Director of Vascular Clinic, and Surgeon, Department of Surgery, Pawtucket Memorial Hospital; Assistant Surgeon, Rhode Island Hospital.*

BREAST MALIGNANCY accounts for approximately 17% of deaths in females from carcinoma in a given year, and this ranks second to cancer of the digestive organs, and essentially on a par with carcinoma of the uterus, as a leading cause of death from cancer.

Over the years, surgery and x-ray radiation have been the bulwarks of treatment. Certain tumors of the breast are thought to be hormone sustained, influenced either by androgens or estrogens as the case may be. Beatson,¹ in 1896, observed regression in two cases of breast malignancy following bilateral oophorectomy. Lett,² in 1905, analyzed 99 cases of inoperable carcinoma of the breast treated by oophorectomy, showing that 36% were improved. Following this work, the procedure received scant attention in the literature for many years, probably because of the fact that ovarian irradiation came to the fore as a method of therapy. In recent years, numerous studies have been performed on laboratory animals to determine the part played by hormones in the development and sustenance of tumors. Prostatic cancer and recurrent carcinoma of the breast have received the most attention. Breast tumors have been created in rats and the influence of such procedures as bilateral oophorectomy, bilateral adrenalectomy, hypophysectomy and a combination of any or all of these procedures has been studied as to their effect upon these tumors. A measurement of the 17 Keto steroids in the urine has served as an indication of hormonal activity in the animals or humans under investigation. The normal or premenopausal human female excretes anywhere between 60 and 40 international units, the postmenopausal female between 40 and 30 international units, the bilaterally oophorectomized female between 30 and 10 units, and when bilateral adrenalectomy is added to oophor-

ectomy, 0 units. Experimental work upon animals has indicated the value of this procedure and has led the way to clinical investigation with human patients suffering from recurrent carcinoma of the breast.

Huggins,³ in 1951, performed the first bilateral adrenalectomy and oophorectomy for recurrent carcinoma of the breast. In June, 1954, at an exhibit of the American Medical Association in San Francisco, it was indicated that this patient was still alive.

Randall⁴ of the New York Memorial Hospital for Cancer feels adrenalectomy may be considered as a possible additional means of temporary control of advanced breast cancer, particularly in cases which have shown a response to castration. Huggins³ feels that all patients undergoing operation for carcinoma of the breast should then, or in a short period of time thereafter, undergo bilateral oophorectomy because of the known influence of these glands upon the life of many such tumors. This is a prophylactic step. When definite metastasis occurs, bilateral adrenalectomy is then performed. The New York Memorial group advise castration once metastases have manifested themselves in the premenopausal patients, and, if the results are favorable, bilateral adrenalectomy is then added. In the postmenopausal group of patients developing metastatic lesions, bilateral adrenalectomy and oophorectomy is performed. It is generally agreed that approximately 40% of such patients undergo significant palliation. Taylor⁵ reported upon eleven patients treated with Cortisone alone and not adrenalectomized, stating they did not receive the same amount of palliation as those who were. Numerous authors agree that there is no method known for predicting which patients may be expected to respond favorably. Patients under the age of forty have a grave prognosis. The longer the interval between original mastectomy and recurrence, the better the prognosis. Patients with onset of metastases in less than one year following mastectomy rarely respond to adrenalectomy. Inflammatory carcinoma suggests a poor outlook. Women excreting high estrogen titers in urine respond better to adrenalectomy than those who excrete small amounts. Galante⁶ points out that in patients who have failed to respond to established methods of

continued on next page

*Presented at the John F. Kenney Clinic Day Conference of the Pawtucket Memorial Hospital Interns' Alumni Association, at Pawtucket, Rhode Island, November 3, 1954.

therapy, bilateral oophorectomy and adrenalectomy appear to offer an additional therapeutic step. He cites a 22% objective improvement and a 45% subjective benefit.

Total adrenalectomy, with or without concomitant oophorectomy, has been performed by us upon eight patients since October, 1953, and constitutes the basis for this report. Of these eight, seven were operated upon prior to January, 1954, and have a sufficiently long follow-up to make the analysis significant. Of the seven patients under consideration, two are now dead, five are living. All of these patients were selected for treatment on the basis of widespread metastatic disease, some had previously undergone x-ray therapy, and hormonal therapy, or both.

A brief summary of their case histories follows.

Case No. 1: (L.K.) The patient was a forty-seven-year-old female who underwent left radical mastectomy for adenocarcinoma of breast with axillary metastases in September, 1950. X-ray therapy followed. In June, 1951, she first showed signs suggesting recurrence, i.e., pain in right lower lateral and anterior chest making breathing difficult. X-ray studies revealed metastatic involvement of ribs on right side, lumbar spine, and sacrum, and possibly upper ends of both femora. Testosterone therapy was started, 100 mgs. three times weekly. This seemed to help for a time, patient feeling better and gaining fourteen pounds in weight. Abdominal hysterectomy and bilateral salpingo-oophorectomy performed in December, 1951. Testosterone continued. Patient bedridden in July, 1953, having intermittent attacks of pain. Bilateral adrenalectomy performed October, 1953. Operation gave a short subjective relief for approximately six weeks. Patient then gradually went downhill, succumbing February 23d, 1954, after a final painful hospitalization period of four to six weeks.

Case No. 2: (H.S.) This thirty-five-year-old female was operated upon elsewhere February, 1952, for carcinoma of right breast with metastases. First seen in August, 1952, because of small nodules, noted by her, in right axilla. Examination also revealed numerous nodules in right supraclavicular and lateral neck region. X-ray studies of chest and lumbar spine essentially negative. Bilateral oophorectomy performed August 28th, 1952. X-ray therapy started soon thereafter. Nodules disappeared, appetite returned, aches and pains departed. In September, 1953, began with "terrible backache" going down legs and into knees. Appetite poor. Lost nine pounds in weight. Some small nodules felt in skin of right neck. Biopsy revealed recurrent carcinoma subcutaneously with a metastatic lymph node. Bilateral total adrenalectomy performed in November, 1953. On first visit

to office postoperatively, looked pale, was somewhat edematous. Liver down four fingers. Some fluid grade 2 plus in abdominal cavity. Had small petechial hemorrhages skin of left forearm. Nodules could be felt around shoulders and right upper arm. About a week later family physician called to state patient was more or less in coma, and he felt it was a liver coma, not due to adrenal insufficiency. Hospitalization refused. Patient succumbed in a few days.

Case No. 3: (M.L.) This sixty-year-old white female had a lump in right breast $3\frac{1}{2}$ to 4 months. Right radical mastectomy for adenocarcinoma of breast with metastases to axillary lymph nodes performed October, 1952. Patient did well for one year, being seen regularly. Some suspicious small nodules were felt in both neck regions in November, 1953. Metastatic x-ray series revealed advanced generalized bone productive metastases throughout skull, complete spine and pelvis, as well as both shoulder girdles and ribs, undoubtedly related to carcinoma right breast. Bilateral adrenalectomy and oophorectomy performed in December, 1953. Course since then to date has been splendid, patient feeling finely, working and carrying on as if nothing were wrong. Repeat x-ray studies in June, 1954, suggested healing of lesions. Urinary calcium low, 5 to $7\frac{1}{2}$ mg. per 100cc suggesting bone destruction not going on. Last seen October, 1954, weight 154, B.P. 148/98, feeling perfectly well.

Case No. 4: (A.B.) This forty-eight-year-old female underwent right radical mastectomy in 1948. Since August, 1952, has been troubled with sacroiliac backache off and on, gradually getting more severe, so that for the past three months has been practically confined to bed, getting only into chair occasionally. Backache radiates down leg so she is unable to walk correctly. Patient jaundiced, icteric, weighing 82 pounds, liver edge felt four fingers below right costal margin. X rays revealed the presence of metastatic lesions in the spine and ribs. Bilateral oophorectomy and bilateral adrenalectomy performed December, 1953. Since operation patient has gained steadily except for one short bout of adrenal insufficiency in August, 1954. She has gained 35 pounds in weight, maintained a normal blood pressure and pulse. Her jaundice has disappeared. Liver edge can barely be felt, and in all respects she feels cured and lives a normal life.

Case No. 5: (C.R.) This fifty-nine-year-old female underwent left radical mastectomy for adenocarcinoma in June, 1953. Now, December, 1953, she has metastases in her chest and comes in for total adrenalectomy. Bilateral total adrenalectomy and oophorectomy performed. This patient has done well. Very dyspneic before operation, in bed most of time. No pain on coughing now, and

cough has practically disappeared. Sleeping with one pillow. Family sees great improvement. Has gained 20 pounds in weight. B.P. normal. Is up and about, leading a fairly normal life when last seen October, 1954.

Case No. 6: (B.V.) This forty-three-year-old white female underwent a left radical mastectomy in March, 1950, for adenocarcinoma of breast without metastases. In May, 1950, developed some slight swelling of left arm, including hand and fingers. In December, 1950, left arm was somewhat firm and indurated, had complete motion. Thought to be seat of venous vascular occlusion with some swelling. In September, 1953, patient began with considerable swelling of left arm and hand, pain in wrist and numbness which awakened her at night. X-ray studies revealed metastatic neoplasm involving good portion of dorsal spine and sternum, possibly also some of ribs on right side. Patient put on testosterone 100 mgs. TID. Bilateral total adrenalectomy and oophorectomy performed in December, 1953. At office in January, 1953, stated she was feeling finely, ironed clothes and baked a cake. Left arm is fine and doesn't bother her at all. Last seen October, 1954, feeling finely, working as dietitian's helper days, running cider press nights.

Case No. 7: (A.G.) This forty-two-year-old female underwent left radical mastectomy in June, 1951. She did well until April, 1953, when she complained of slight pain in her back. A sacroiliac belt was ordered, without help. In December, 1953, she was x-rayed and metastatic carcinoma of fifth lumbar vertebrae diagnosed. Left oophorectomy, bilateral adrenalectomy performed on January 2, 1954. This patient has had a fair result thus far, but not an ideal one. Her pain was relieved for a while, only to return. She was put on increased doses of cortisone and testosterone, gaining considerable weight, having quite some pain. With discontinuance of testosterone she has improved. She takes Emagrin tablets twice daily and has no pain whatsoever. Is sleeping well with help. Appetite is good. Does all her own housework and takes care of children.

Summarizing our results in this group of seven cases, followed for a period of about one year, two are now dead and showed no significant response to the therapy, a mortality and failure rate of 29%. Four have improved markedly and are leading essentially normal lives, a 58% favorable response. One has improved moderately, leading a somewhat restricted but still painless existence, and can be said to have been significantly palliated, if not completely so. There has been no operative mortality in this group.

The pre-operative preparation of these patients for surgery and their postoperative management are most important. The average patient who can

withstand a major surgical procedure can also withstand bilateral oophorectomy and adrenalectomy. In addition to the usual preoperative preparation for major surgery, such a patient is given 50 mgs. of cortisone I.M. every six hours, the day before operation, including 5 mgs. of DOCA I.M. and 5 grams of added salt to the diet. The morning of the operation another 50 mgs. of cortisone and 5 mgs. of DOCA are administered. During the operative procedure 1000cc. of blood is given, and if necessary, the blood pressure is supported by injection of norepinephrine. The first twenty-four hours postoperatively the patient receives 50 mgs. of cortisone I.M. every six hours, and one injection of 5 mgs. of DOCA. The second twenty-four hours cortisone is given I.M., 50 mgs. every eight hours, with 5 mgs. of DOCA. The third twenty-four hours cortisone is given I.M. 50 mgs. every twelve hours, with DOCA 3 mgs. On the fourth day cortisone may be given by mouth, 25 mgs. every six hours and DOCA thereafter 3 mgs. every other day. Cortisone is promptly cut down to a basal dose of 25 mgs. BID. Added salt to the diet is given—approximately 3 grams daily. These patients appear no more difficult to handle postoperatively than the average severe diabetic. They are informed about their state and instructed to consult a physician in the case of any sudden unexpected stress which may change their metabolic requirements. Malaise, weakness, orthostatic hypotension, sweating, tachycardia—all may suggest impending adrenal crisis and should be promptly recognized and treated.

The operation itself consumes approximately two hours. The adrenal glands are removed with the patient in the posterolateral position, resecting the twelfth rib. We have removed the ovaries in the turn-over of the patient from one side to the other when this has been necessary. The severely ill patients withstand the procedure remarkably well, and the results have been most gratifying to date.

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THE PROBLEM OF PLATELET TRANSFUSION

ERWIN O. HIRSCH, M.D.

The Author, *Erwin O. Hirsch, M.D., of Providence, Rhode Island, Assistant, Clinical Pathology, Department of Pathology, and Assistant Physician, Department of Medicine, Rhode Island Hospital.*

GREAT STRIDES have been made in the use and availability of whole blood transfusions. In the last quarter century, it has been recognized that the infusion of blood stored in ACD ("citrate") solution is capable of replenishing blood volume and red cells. As to the blood platelets, very few published attempts to transfuse them exist prior to 1950. In 1947, Lawrence and Valentine reported that massive direct transfusions of whole blood without anticoagulants did not result in a rise of platelets in the recipient.¹ On the other hand, direct vascular anastomosis in animals made platelet transfer possible.² In 1948, when the coating of glass surfaces with silicon and the clot delaying action of such coated glass was first reported, Hirsch and Dameshek were able to achieve a successful transfusion of platelets by transferring blood from a polycythemic donor with high platelet count into a thrombocytopenic recipient by means of silicon coated syringes.³ Subsequently the systematic use of high platelet polycythemic donors and the use of silicon coated syringes made possible an evaluation of platelet transfusions into thrombocytopenic recipients.⁴

The following conclusions were arrived at:^{4,5}

1. In patients with aplastic anemia, donor platelets can be recovered almost quantitatively. Their life span is between five and six days.
2. In idiopathic thrombocytopenic purpura, the life span of transfused platelets is shortened, varying between a few hours to three days.
3. Repeated transfusions of blood containing intact platelets results in a successive decrease in platelet recovery and survival.
4. The bleeding tendency of the recipient is brought under control whenever a rise in platelet count, however short, can be produced in the recipient. Clinical improvement frequently outlasts platelet survival but the *tendency* to bleed as distinct from actual bleeding closely parallels platelet survival.

Before discussing further progress in the technique of platelet transfusion, it is well to remember some basic problems.

Bleeding due to thrombocytopenia only occurs when the platelet count is below 40,000 per cubic mm. Usually at a time when platelet transfusion appears desirable, the platelet count is 10,000 or less. The average normal platelet count is around 250,000. An adult male with a blood volume of 5,000 liters would therefore require 1/5 of his blood volume to raise his platelet count from 0 to 50,000. This would involve the rapid infusion of 1,000 c.c.'s of blood, which is impractical unless the patient is severely anemic and the possessor of a strong cardiovascular system. Moreover this would meet only minimum requirements and would assume that all platelets have actually reached him in a viable state. In order to allow for a margin of safety, 1,500 c.c.'s of blood are necessary. It is for this reason that patients with polycythemia vera who possess high platelet counts (not all do) make the best donors when a platelet transfusion is desired. If the donor has a platelet count of 750,000, then 500 c.c.'s of his blood would raise the platelet count of the recipient by 75,000.

Progress in Techniques

The use of siliconed syringes while possessing some advantages requires siliconizing of equipment. Results equally good as those observed with siliconed syringes were obtained with plastic containers, each holding 125 c.c.'s. These plastic containers are furnished with suitable outlets and contain no anticoagulants. The donor and the recipient are placed nearby. Arquad coated needles are introduced into a vein of each, a plastic bag is attached to the needle in the donor's vein and when full, it is transferred to the recipient. In the meanwhile, donor blood is collected in another plastic container. These are discarded after use.

Recent studies indicate that platelets remain intact if blood is collected in plastic containers containing ethylene-diamine-tetra-acetate (EDTA) as an anticoagulant. This makes it possible to collect 500 c.c.'s at one time and allows somewhat more time to elapse between blood collection and infusion. It does not obviate the use of high platelet polycythemic donors.

In an attempt to avoid the use of polycythemic donors, attempts have been made to concentrate platelets from normal donors in a small volume.⁶ The evidence strongly suggests that by the use of EDTA as an anticoagulant, platelets can be concentrated, and when infused survive normally. It must be realized however that the preparation of platelet concentrates is time consuming, requires extreme care, and the use of refrigerated centrifuges.

For the time being, therefore, the use of polycythemic donors is still essential.

Successful platelet transfusion therefor can today only be made available by the use of specialized equipment, meticulous technique, expeditious handling of blood to be transfused and the availability of a panel of polycythemic high-platelet donors. The following two cases illustrate the benefits derived from platelet transfusion and the advantage of having polycythemic donors available.

Case 1. W. C., a nineteen-year-old, white, male has had acute lymphatic leukemia since April, 1954. Cortisone produced a partial remission, but in September, 1954, when his platelet count fell to almost zero, uncontrollable bleeding from the nose developed. After contacting several physicians and institutions in the Providence area, a suitable polycythemic donor with a platelet count of 600,000 was found through the courtesy of Dr. Irving Beck. A semi-direct transfusion of 500 c.c.'s of this donor's blood was given utilizing 250 c.c. plastic containers without anticoagulants. Although ten minutes after transfusion the platelet count had risen to only 25,000, bleeding stopped and has not recurred since. Although the platelet count remained low for another six weeks, at the end of that time a rise in platelet count occurred due to a remission under 6-mercaptopurin therapy. *Comment:* In this patient with acute leukemia, it was possible to arrest a troublesome hemorrhage and tide the patient over until a remission had occurred. Had a polycythemic donor not been made available and had the technique of platelet transfusion not existed, the bleeding would at least have been the cause of prolonged hospitalization. As it was, cessation of hemorrhage added greatly to the comfort and optimism of the patient.

Case 2. P. S., a seven-year-old, white, girl had had aplastic anemia for five months. When I was first asked to see her, bleeding from the nose had been very troublesome for several days and had failed to respond to conventional methods of treatment. Again a search for a suitable polycythemic donor was made and one was discovered at the Howard State Hospital through the courtesy of the administration, the physicians, and the laboratory technicians at the State Hospital. Six hundred c.c.'s of the donor's blood was collected in a plastic

container containing ethylene-diamine-tetra-acetate as the only anticoagulant. The container was immediately placed in ice water, taken to the bedside of the patient, and infusion started approximately one and one-half hours after the blood had been drawn. There was a fairly severe histamine-like reaction but the platelet count rose from practically zero to 90,000 and remained at this level for two days. The reaction and the rapid disappearance of infused platelets must be blamed on the patient's sensitization to platelets caused by previous transfusions. These reactions are common in such individuals but are not dangerous and can probably be controlled by the antihistamines and adrenalin. In this patient, bleeding from the nose stopped dramatically during infusion of the platelet-rich blood and did not reoccur for several weeks. *Comment:* This is another instance where through the cooperation of other institutions a polycythemic donor was made available and in which his blood aided greatly in adding to the comfort of the patient and in her management.

CONCLUSION

Platelet transfusions from polycythemic donors is a practical method of therapy in cases of thrombocytopenia. It is preferable to special concentrating techniques which are excessively time consuming. In order to enable the use of platelet transfusions from people with polycythemia vera, it would be desirable to have a panel of such people with a record of their blood types and platelet count in the blood banks of the state. These people could then be contacted expeditiously, when there is need for a platelet transfusion.

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PATRONIZE JOURNAL ADVERTISERS

RUPTURED LUMBAR INTERVERTEBRAL DISK SYNDROME CAUSED BY METASTATIC DISEASE

DAVID J. LaFIA, M.D.

The Author. David J. LaFia, M.D., of Providence, Rhode Island. Visiting Neurosurgeon, St. Josephs and Roger Williams General hospitals; Assistant Surgeon, Department of Neurosurgery, Miriam Hospital; Consultant in Neurosurgery, Woonsocket Hospital.

NOWADAYS the excision of a ruptured lumbar intervertebral disk is an exceedingly common operation. Operative mortality is generally less than 1%, and the lesion benign. So the patient complaining of low back pain and sciatica — "the ruptured intervertebral disk syndrome" — gets a good prognosis. Because the possibility of a malignant disk lesion is rarely mentioned, this case is reported.

Case Report: A.B.* a white woman of 57, in January, 1954, first complained of right sciatica. By March, 1954, the pain lessened but never disappeared. It recurred with severity in May, 1954; she spent sleepless nights because of pain; movements of any kind aggravated it. No disturbances of urination. Weight loss of about ten pounds in six months.

In 1934, she had a total hysterectomy and oophorectomy; no malignancy was noted.

Examination: Patient could hardly stand because of sharp, jabbing pain in the right hip. Straight-leg-raising was painful on the right at fifty degrees, on the left at eighty. Sensation to pinprick diminished over right first sacral dermatome. Good strength and tone in the lower limbs. The ankle and knee reflexes were absent. Rectal examination was negative. No masses could be palpated in the breasts. Thyroid gland was not enlarged.

Laboratory: Roentgenograms of the lumbosacral region and chest showed no gross abnormalities. A tiny area of radiolucency in the right iliac crest was reported normal by several roentgenologists. Pantopaque myelography outlined a concave deformity extending from the lower portion of the L5 vertebra to the first sacral. This was interpreted as a large intervertebral disk protrusion or possibly a neoplasm. Cerebrospinal fluid contained 200 mg.% protein.

Operation: On 3 June, 1954, a bilateral lumbo-

*Patient referred by James Hardiman, M.D., Providence.

sacral laminectomy was done. On exposing the sacrum on the right side, a thinned out area of bone 5 mm. in diameter was seen. The laminae were extremely thin and papery when removed by a rongeur. Presenting between the first sacral nerve root and the common dural sac medially, the mass was covered with posterior longitudinal ligament and apparently coming from the intervertebral disk space. With a blunt instrument the mass was easily opened; it contained soft necrotic material. The disk space was completely empty except for a few tiny fragments of similar material. Frozen section of this material revealed giant cells but no evidence of neoplastic disease. The posterior-inferior portion of the body of the L5 vertebra was friable and apparently eroded. The laminectomy was carried over to the left side, and after retraction of the left first sacral nerve root and common dural sac, the posterior longitudinal ligament was here, too, soft and the disk space was emptied of further necrotic material.

Pathological report: Metastatic papillary adenocarcinoma. Microscopic sections showed, "a papillary pattern of branching and coalescing connective tissue processes which are covered with multilayered polygonal and polyhedral cells containing large pleomorphic bizarre-shaped hyperchromatic nuclei. Glandular spaces are formed by agglutination of the papillary processes. Many spicules of necrosed, destroyed bone are incorporated in the growth." (Figure I)

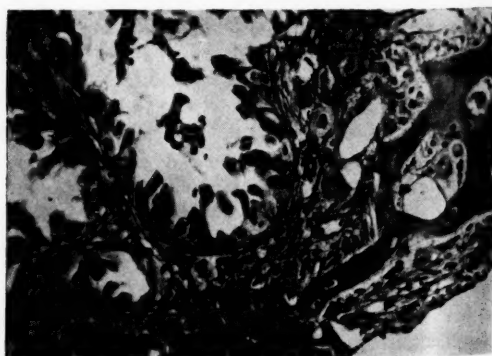


FIGURE I

Microphotograph of metastatic adenocarcinoma to the intervertebral disk. Note necrosed bone spicules. (x200)

Course: Patient was relieved of the sharp pain in the right lower limb, but complained of an aching sensation behind both knees. On the tenth postoperative day she was out of bed, but unable to walk unassisted. Though able to control her bladder and bowels, there was bilateral weakness of dorsiflexion of the feet.

An unsuccessful search was made for a primary neoplasm in the breast, thyroid, gastrointestinal and genitourinary systems.

Patient is alive and comfortable six months after laminectomy and one year after onset of symptoms.

Comment

While metastases to the lumbar vertebrae from thyroid, prostate and breast malignancies are relatively common, those to the intervertebral disks are practically unheard of, perhaps owing to the poor blood supply of the intervertebral disk. The presence of necrotic bone in the pathological specimen would favor metastases to vertebral body with extension to the intervertebral disk. The erosion noted at operation was not more than several millimeters. Even postoperative roentgenograms of the lumbar spine failed to show a lesion of the vertebral body. It seems probable that the metastasis was chiefly to the intervertebral disk though it cannot be proved.

SUMMARY

Laminectomy for ruptured lumbar intervertebral disk perhaps offers the best prognosis of all neurosurgical operations. Yet metastases to lumbar intervertebral disk can simulate a benign disk lesion as proved by this case of a 57-year-old woman with typical signs and symptoms of a ruptured L5 disk, who had metastatic adenocarcinoma to the L5 disk.

ACKNOWLEDGMENT

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THE CLINICAL PROBLEM OF ASEPTIC MENINGITIS

continued from page 206

Now I would like to say a few words about *chronic aseptic meningitis*. In this there are two problems, first the search for the causal organism, and second for the focus of infection. If there are no cerebral symptoms, the first thought is always of chronic osteomyelitis of a vertebra, causing a chronic epidural abscess. Vertebral pain and tenderness, and often local edema, usually provide a good clinical indication. In this category also comes the chronic adhesive arachnoiditis that occasionally follows spinal anesthetic. Brain abscess or tuberculoma usually declare themselves by cerebral symptoms, and are unlikely to remain undisclosed for long. There remains a small group of patients in whom it is often a long time before the bacteriology is established, and in this group torulosis is the commonest finding. Thus a thirty-six-year-old woman was noted to have a running ear in December, 1951, associated with severe unremitting headache that persisted a month before the patient took to bed, by now suffering from nausea as well as headache. In the following week she became very drowsy and was found to have a stiff neck. Lumbar puncture showed a pressure of 500 mm., 120 lymphocytes and 90 polymorphs. She was given aureomycin and after ten days improved, but with continued increase of cell count by lumbar puncture. She then again became drowsy and in the next two days developed confused speech and some weakness in the right limbs, and a temperature of 100°. Blurred optic discs were found and left temporal lobe abscess seemed the probable cause. The CSF pressure was 400 mm. with 80 cells (12% polymorphonuclears) and normal sugar, normal chlorides. The left temporal lobe was explored at operation but no lesion was found. A ventriculogram showed no displacement of the cerebral ventricles. She remained stuporous and on the fourteenth day the first spinal fluid which had proved sterile on ordinary media grew out *Cryptococcus* on Sabouraud's medium. Despite many kinds of treatment in the following two and one-half years her spinal fluid still showed positive cultures of this organism, and cell counts ranging from 80 to 100 lymphocytes, sometimes a few polymorphs. Torulosis is an extraordinary infection. The most common portal of entry is a lung cavity, and there is a special liability in diabetes and with Hodgkin's disease. I know of a physician in intermittent practice when he is well enough, whose spinal fluid shows consistently approximately 45 lymphocytes and has done so for many months at a time, and whose only symptoms are recurrent headaches and dizziness, greatly improved by rest, sunshine and fresh air. It is important, of course, to exclude meningeal tuberculosis

continued on next page

in such cases, and indeed tuberculosis may develop on top of torulosis.

Occasionally a brain tumor leads to subacute or chronic aseptic meningitis. This is extremely unusual, and is most commonly a spreading sarcoma of the meninges or "meningeal sarcomatosis." Recently a patient was reported by Valaitis¹⁰ with bronchiolar carcinoma of lung and metastases in the meninges of the posterior fossa, associated with intractable headaches, mental confusion, blindness of one eye, and variable degrees of nystagmus for three months. The initial spinal fluid showed 8 lymphocytes besides high pressure and a protein of 190 mg., but in ensuing weeks the cell count rose to 4905 "mostly lymphocytes" one week before death 3 months later. A case of our own with metastatic melanoma of the meninges had 8 lymphocytes per cmm. for a long period.

Chronic *neurosyphilis* has not been mentioned, for this is usually fairly obvious, and a pleocytosis is unlikely without accompanying positive serology.

The remaining common cause of chronic meningeal reaction is the most important, namely *tuberculosis*. It is often the most difficult to diagnose. The difficulty arises partly because the symptoms are protean, and partly because the spinal fluid obtained by lumbar puncture often does not fairly represent the extent or intensity of the meningeal inflammation. It is the habit of meningeal tubercles to congregate most intensively at the base of the brain and there set up a thick gelatinous exudate. This exudate not only effectively blocks the circulation of spinal fluid but seals off the area of most intense inflammation. Lumbar puncture fluid may show only 30 to 100 lymphocytes per cmm. and for a long period an absence of organisms, though severe necrotizing lesions are present around the base of the brain. As in the case of cranial pyogenic disease, and in virus disease, but for a different reason, the intensity of cerebral and constitutional symptoms in relation to the mild meningeal reaction should lead to suspicion of the true state of affairs. The drop in CSF chlorides below 600 mg. is only another expression of the severity of constitutional disorder.

A more difficult type of case is where multiple chronic tuberculomas are present. For example, a colored man with a history of progressive weakness of the right arm and leg for two months, with severe headaches, had a spinal fluid pressure of 250 mm., 120 cells per cmm., of which 15 were polymorphonuclears and 105 lymphocytes. The total protein was 66 mg., sugar 51 mg., and the fluid was sterile. The cause was multiple tuberculomas of brain and cerebellum. The clinical picture resembles brain tumor, and only the meningeal reaction gives the clue to the inflammatory nature of the lesions.

Some of the problems of non-purulent meningeal reaction or "aseptic meningitis" have been reviewed. There is no easy road to their distinction from one another, no infallible test, no distinctive sign. They fall into acute and chronic types. Of the acute types one should always think first of extension of disease from the cranial sinuses, whether extradural or subdural abscess, or necrotizing encephalopathy before considering virus infection seriously. Of the chronic types, tuberculosis remains the most important to exclude, but brain abscess, chronic epidural abscess, torulosis and syphilis remain possibilities. In all these conditions it is useful to remember that a polymorphonuclear response indicates necrosis of tissue, and that the relative degrees of signs of constitutional disturbance, brain damage and of meningeal reaction will indicate the primary location of disease.

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AIR POLLUTION

WE RECENTLY ATTENDED a meeting of the League of Women Voters at which were present numerous men representing big civic organizations. Mr. Austin C. Daley, Air Pollution Engineer of Providence, reported to us on recent work. He has been traveling about the country interviewing officials of the Bureau of Mines and also went down into West Virginia where you may imagine that air conditions in some of the cities with big steel mills are pretty terrible. He found that industry around that way was not in full-hearted sympathy in the drive for air pollution. This, of course, is rather natural because it must entail a good deal of expense for a large manufacturing organization to take care of their smoke.

Here in Providence it is not so bad. There has been a good deal of cooperation from those who had previously polluted our air a great deal. Of course, there are some glaring examples of the opposite attitude hereabouts. One sad incidence was brought to the light of day (even though the section of the community involved had much interference with their daylight) a few months ago. One chimney had been belching smoke in the residential section for a long while and there had been many complaints made to the authorities by the dwellers therein and even by the local priest.

Now such testimony as this we would suppose might send a man to prison for homicide, but such testimony evidently is of no value before the law when a heavy cloud of smoke is the offender. It seems that the Bureau of Mines in 1868 had adopted a *smoke chart*, which in conjunction with a gadget accurately handled, might tell the exact density of smoke. This gadget had been used in the case mentioned but not at the exact number of feet suggested. Now this constituted a legal technicality and legal technicalities are much prized by law offenders, so the action brought by the pollution engineers was thrown out of court.

There is no doubt that this was a great setback to the movement for improving our atmosphere hereabouts. Let us say that it was desired to check up on the Narragansett Electric Company from which may be seen on many nights what seems like a pall of smoke. The Narragansett is surrounded by high fences. It would be very difficult to get the gadget within fifty feet of the smoke stacks, which, we believe, is the proper distance. Presumably, the *smoke chart* would be of little value in the night time. This illustrates a well-known fact that actions to improve ordinances are difficult to put into effect.

There was much cheer in some of Mr. Daley's report. He is proud of the fact that his city of

continued on next page

Providence is the only city in New England that has attempted to regulate air pollution. He also reported that down in Washington there has been an appropriation of five million dollars which Mrs. Hobby may use in investigating air pollution. He also reported that the Bureau of Mines said that he had investigated properly the smoke problem which we spoke of at the beginning of this article, and that they would attempt to develop their *smoke chart* so that it would not be so easy in the future for offenders to hide behind it. On the whole, we think we are doing pretty well hereabouts.

WE'VE DONE OUR CHILDREN WRONG

Dr. Henry E. Utter recently wrote a letter to the local paper concerning the continual despoiling of the few open places left to us in the City of Providence. Once again he referred to the seizing of the best part of Davis Park for the site of a veterans' hospital. There were many places in the state where this hospital could have been well placed; instead the people, and particularly the children of the Smith Hill district, had stolen from them what, by all rights, was necessary to them.

If ever a district needed some open space and particularly lots of playgrounds for the children, it was in the Fox Point area. There was plenty of opportunity to take a site there for a school at not a great expense; instead the children had taken from them some more playground to put up what the press refers to as "a millionaire school." Millionaires can get plenty of good education, and in past years most of them have, without such elaborate schools, but the children of Fox Point cannot well get playgrounds.

Dr. Utter points out that they are now planning to take away the small amount of park and recreation space that there is along the Seekonk River. All these things are directly contrary to what city planners insist that good cities should be. Evidently, in the opinion of our city fathers, the ideal city is what one can see from the car windows as one travels from the 42d Street Station in New York City to 125th Street.

It's high time that a little more demonstration of civic pride be shown in Providence.

REGIONAL PLANNING?

When a study commission named by the Massachusetts legislature found that the cost for a new medical-dental school in the Commonwealth presented too great a financial burden to present to the taxpayers for the return to be expected, it reported its findings accordingly.

However, on the basis of a regional compact for higher education initiated among the southern states where there was a definite need for upgrading of schools, as well as for securing professional

students for rural areas, a plan for a New England higher education compact is being pushed in the northeast, with the land grant colleges, or state universities now, most vociferous in the quest for additional facilities. The need for additional professional personnel is assumed. We have yet to read a comprehensive report of what the needs are in this part of the country for doctors and dentists, how an educational compact will solve such needs if they exist, and how the program will justify the tax expense contemplated.

Perhaps the most startling evidence of the possible ramifications behind the proposal is seen in the legislation that has been placed before the Rhode Island general assembly the past two years to bind us to a regional compact. What started out, as noted above, as a solution to a way to train more physicians and dentists, is now augmented in the local legislation, which is presumably a model act for all the New England states, as follows:

"The purpose of the New England higher education compact shall be to provide greater educational opportunities and services through the establishment and maintenance of a coordinated educational program for the persons residing in the several states of New England, parties to this compact with the aim of furthering higher education in the fields of medicine, dentistry, veterinary medicine, public health, and in professional, technical, scientific, literary and other fields" (italics ours).

Lest anyone be naive enough to believe that the scholarship program will be devoid of politics let him consider how Rhode Island would establish the three "resident members" who will be the state's representatives on the board of higher education for the region. One member must always be the commissioner of education who is himself a political appointee. Another is to be a citizen of the state designated by the Governor as *his responsible representative* (italics ours).

But look how the third member is rigged as a pure political appointee! He is to be a state legislator who is a member of the Rhode Island commission on interstate cooperation. This commission has public representatives not members of the general assembly, but they are excluded; only the politically-bound members are eligible.

When a New England Workshop conference was held in Boston in 1953 to discuss this entire proposal for additional medical and dental personnel for the area the conclusion of the group pointed up the definite need for a complete study by the respective states of their individual needs. Until such a study is made in Rhode Island the general assembly should leave the regional compact proposal locked in committee files.

REPRESENTING MEDICINE

The demands upon the medical profession the past two decades for its advice and counsel has

called to the service of our communities more and more of our members who are asked to give freely of their time and talents to advance public health and welfare programs. Physicians have accepted every challenge and the unwritten history of voluntary service on local, regional and national community organizations by doctors would fill many volumes.

Rhode Island has contributed its fair share to this vital work, extending its help up to national levels on several occasions. Certainly no member has been more willing, enthusiastic and capable in carrying on multitudinous community services over and beyond the daily practice of medicine than our Doctor Charlie Farrell of Pawtucket. It is little wonder, then, that when the need arose recently for a Medical Advisory Committee to the U. S. Department of Health, Education and Welfare he was a logical choice to be numbered among the appointees.

The new fourteen-member national advisory committee to the Social Security Administration meets monthly in Washington to consider medical aspects of administering the new "disability freeze" provision in the social security law. This provision is similar to the waiver of premium in commercial life insurance, and it permits a worker to keep his old age and survivor's rights intact when he is totally disabled for work for an extended period. The committee will set up guides and procedures for obtaining and interpreting medical evidence as to existence and extent of disability.

To our Charlie Farrell, and others like him who serve as the "representatives of medicine" with their only reward that of the satisfaction of serving the public and the profession for the good of both, our sincere appreciation and thanks. Their service is "beyond the call of duty," and it therefore merits the commendation of every physician.

HARD TO BEAT

Each year the committee on arrangements for the annual meeting spends considerable time and effort in planning a diversified and interesting program for the entire membership at the annual session of our organization. This task has been going on now for one hundred forty-three years. Undoubtedly each arrangements group, and justifiably so, considers that its efforts have produced one of the outstanding sessions in the long history of this medical society.

Certainly the scientific programs through the years have brought renown to our organization, and few larger medical groups have been able to present more able and notable speakers to their physicians at annual conferences. It is difficult to better a previous program these days, but we are inclined to express an advance opinion that this year's session really stands out.

To top a galaxy of brilliant medical lecturers on a wide range of medical and surgical subjects with a Chapin orator who has within the past six months been awarded the world-renowned Nobel prize for medical scientific research, and a dinner speaker whose career in the United States Navy has made him a hero warranting a biographical motion picture recording, is hard to beat.

Certainly every member of the society should check the May 4 and 5 dates for attendance at the fine lectures at his own Medical Library, which incidently has recently undergone renovation adding further luster to the setting for the 144th Annual Meeting.

PHYSICIANS AND THE CHAMBER OF COMMERCE

The Greater Providence Chamber of Commerce is currently engaged in a program for increased prosperity for the metropolitan Providence area. At the March meeting of the district medical association the views and plans of the Chamber of Commerce were excellently set forth by Mr. Thomas F. Gilbane, its president.

Physicians are asked to support many community programs and agencies. We feel certain that a complete check of all the various community interests would find medical representation involved in each one. The Chamber of Commerce has stated that it seeks the counsel of physicians for its standing committees because of their unusual knowledge of community problems over and above health. For example: physicians are probably more aware of traffic conditions than any other group, for every doctor is faced with all the problems of motoring in the discharge of his daily visits to the four corners of our large metropolitan area.

The principles of medical ethics of the American Medical Association, to which we all subscribe, includes the provision that "Physicians, as good citizens, possessed of special training, should advise concerning the health of the community wherein they dwell. They should bear their part in enforcing the laws of the community and in sustaining the institutions that advance the interest of humanity. . . ."

The health of a community is tied up in no small measure with its economic security which involves many factors in a large metropolitan area. Providence has a problem to improve its economic health. The Chamber of Commerce has launched a well-conceived program for a solution of the problem. The need for physician-members of the Chamber has been expressed. Every physician in the metropolitan district will be solicited by mail to join in the achievement of a finer and more prosperous Greater Providence. Give heed to the call to this fine community service!

15th ANNUAL CONGRESS ON INDUSTRIAL HEALTH

WASHINGTON, D. C., JANUARY 25-26, 1955

REPORT OF STANLEY SPRAGUE, M.D., *Representative of the Rhode Island Medical Society*

THE MAIN SESSIONS of the Congress on Industrial Health were preceded by general meetings of members of the AMA Council on Industrial Health, state medical society representatives, and the district councillors of the Industrial Medical Association.

Doctor Hirsch, recently assigned to the consideration of legal problems of the activities of the council on industrial health, spoke at length at the first general meeting on corporation and medical practice, pointing out many lines of conflict in which corporation medicine was not only unethical, but also illegal. He left the impression with your representative that in compensation cases there is very little to be withheld from the court in what is commonly known as "privileged communications."

The congressional legislative picture was presented by Doctor Frank Wilson, head of the AMA Washington office. He stated that there were already an estimated one hundred and twenty medical bills to be presented to the present session of congress. Highlights of his comments were: 1) the trend by labor for demanding bigger fringe benefits; 2) the impetus for a federal subsidy to the states to establish a formula for insurance costs in every industrial compensation case; 3) interest in air and water pollution studies with the responsibility for financing such programs divided between the individual states and the federal government; 4) rehabilitation programs covering the aged, sick and the infirm; 5) proposals for employee health coverage, the care of relatives of soldiers, for overseas federal employees, and domestic civil employees.

A report from Doctor McCahan, chairman of the committee for the revision of Standing Orders for Nurses in Industry, offered a clear-cut picture of present problems, and showed that his committee has formulated a rather different concept than held formerly by many in the industrial health field. When revised completely, and approved, the new manual will be published as guiding principles for nurses in occupational medicine.

It was reported that eight state medical societies (including Rhode Island) have so far given their approval to the publication of GUIDING PRINCIPLES OF OCCUPATIONAL MEDICINE.

At the second general meeting a report from the office of vocational rehabilitation indicated that more than 250,000 persons need rehabilitation services every year, and the office listed a backlog of an estimated two to six million persons seeking assistance. The finding, treatment and training of the disabled naturally requires multiple activity, which may be realized to some extent through provisions in the revised Hill-Burton bill through which schools may train more trained personnel to carry on this essential work of rehabilitation services.

The Public Health Service reported a small budget has hampered its growth. It is willing to offer consultant service to the states in public health matters to the best of its ability.

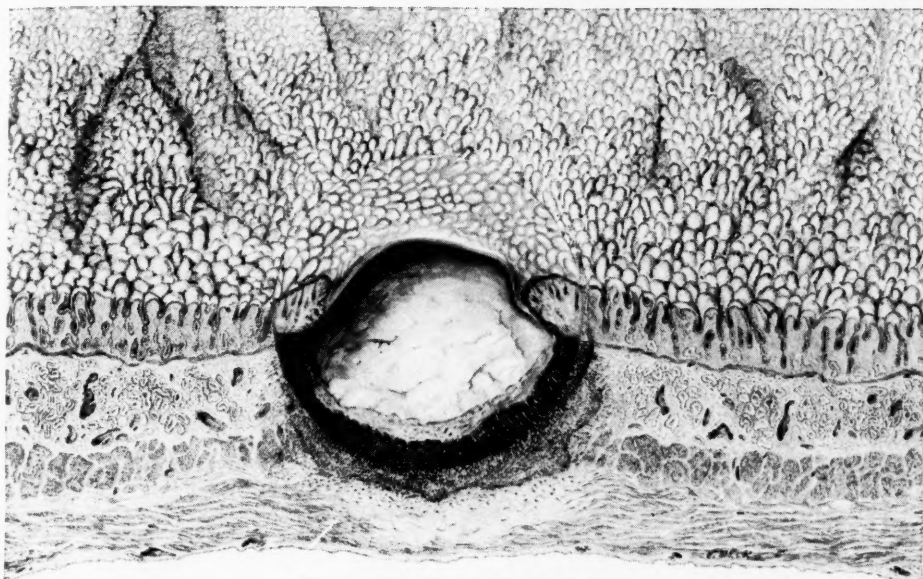
Few states had anything new to report. In the larger industrial centers some states reported seminars on industrial health have been held with varying success as regards attendance by physicians in general practice. The armed services are reported to be endeavoring to employ civilian physicians in naval units along the entire Atlantic coast, but such physicians must accept a civil service status. The low rate of compensation was seen as a factor in the failure to attract many physicians to this work.

The day prior to the opening of the conference the state delegates attended a scientific session at the National Institutes of Health at Bethesda, Maryland. All the delegates, I am sure, were impressed by the tremendous size of the institute centers with their complete laboratory equipment in every division. Our attention was called to the fact that any individual physician in the country having a baffling case on which a tentative diagnosis has been made, may on application have his patient admitted to the National Institute, provided that the institute has at that time a similar type of condition under investigation. Also, any physician may request that his name be placed on the mailing list, and thereby receive a monthly brochure of the activities in progress.

Doctor Melvin N. Newquist, medical director of the Texaco Company, presided at the opening general session of the congress at which the status of the health of the working population was reviewed by Dr. A. G. Kammer of the University of Pitts-

concluded on page 220

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Pain of ulcer is associated with hypermotility; the pain is relieved when abnormal motility is controlled by Pro-Banthine.

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"... our studies indicate that ulcer pain in the uncomplicated case is invariably associated with abnormal motility. ...

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Pro-Banthine Bromide (β -diisopropylaminoethyl xanthene-9-carboxylate methobromide, brand of propantheline bromide) is a new, improved, well tolerated anticholinergic agent which consistently reduces hypermotility of the stomach and intestinal tract. In peptic ulcer therapy² Pro-Banthine has brought about dramatic remissions, based on roentgenologic evidence. Concurrently there is a reduction of pain, or in many instances, the pain and discomfort disappear early in the program of therapy.

One of the typical cases cited by the authors² is that of a male patient who refused surgery despite the presence of a huge crater in the duodenal bulb.

"This ulcer crater was unusually large, yet on 30 mg. doses of Pro-Banthine [q.i.d.] his symptoms were relieved in 48 hours and a most dramatic diminution in the size of the crater was evident within 12 days."

Pro-Banthine is proving equally effective in the relief of hypermotility of the large and small bowel, certain forms of pylorospasm, pancreatitis and ureteral and bladder spasm. G. D. Searle & Co., Research in the Service of Medicine.

1. Ruffin, J. M.; Baylin, G. J.; Legerton, C. W., Jr., and Texter, E. C., Jr.: Mechanism of Pain in Peptic Ulcer, *Gastroenterology* 23:252 (Feb.) 1953.

2. Schwartz, I. R.; Lehman, E.; Ostrove, R., and Seibel, J. M.: A Clinical Evaluation of a New Anticholinergic Drug, Pro-Banthine, *Gastroenterology* 25:416 (Nov.) 1953.

SEARLE

INDUSTRIAL HEALTH CONGRESS

concluded from page 218

burgh School of Public Health, and a four-member panel discussed what is needed to do a better job in industrial health from the viewpoint of industrial hygiene, industrial nursing, industrial medicine, and official health agencies.

At the second session of the congress, Mr. Charles E. Tosch of New York gave an interesting review of recent trends in providing major medical expense insurance, stating that several insurance companies are proceeding with a policy to cover such disabilities as heart disease, tuberculosis, mental illness, etc., up to a stated maximum after a deductible payment of \$100 or more to be paid by the insured. This proposal is also on the lines presented by our Dr. Joseph C. O'Connell, in his address to the corporation of Physicians Service at its annual meeting in Providence in January.

Continuing the talks on industrial medicine and the economics of medical care, Doctor F. Benedict Lanahan, medical director of the Electric Storage Battery Company of Philadelphia, said the present condition of state cash sickness compensation programs was a challenge to the medical profession to organize more fully against socialized medicine. Doctor James R. McVay, member of the board of trustees of the AMA, warned against unnecessary hospitalization given with the hope that the insurance coverage would stand for the cost.

On the subject of workmen's compensation, Mrs. Anne Ramsay Somers of the workmen's compensation division in Washington, stated that the medical profession will more and more be responsible for the successful operation of state workmen's compensation programs. Doctor Robert O'Connor of the Liberty Mutual Insurance Company, spoke of the high cost of group plans generally, stating that some cost from three to ten times workmen's compensation program costs, and he expressed the opinion that group costs for employee illnesses not related to compensation cases could be greatly reduced by intelligent control of cases.

Conclusions your delegate drew from the conference included those that the general practitioner is the key man to reach for greater progress in industrial medicine, that more attention must be paid by every physician to rehabilitation of the injured or ill workman, that there should be detailed studies undertaken by those industrial firms that constantly employ physicians, or have regular consulting physicians on their staff.

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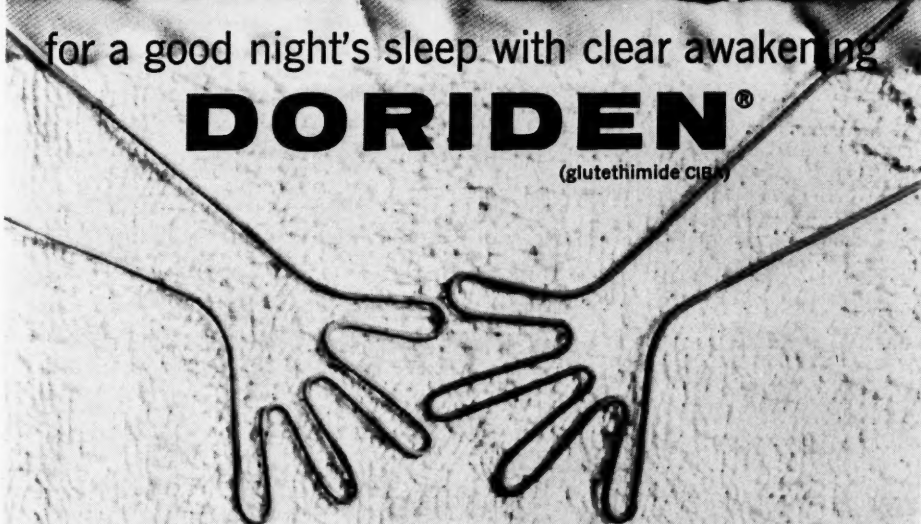
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PROGRAM . . . 144th ANNUAL MEETING

RHODE ISLAND MEDICAL SOCIETY

*May 4-5, 1955**At the Rhode Island Medical Society Library, Providence*

WEDNESDAY, MAY 4

1:00-1:45 P.M. REGISTRATION AND TOUR OF TECHNICAL EXHIBITS

1:45 P.M. CALL TO ORDER

GREETINGS FROM THE PRESIDENT, HENRI E. GAUTHIER, M.D.

2:00 P.M. "THE IMPORTANCE OF PLASMA PROTEIN ABNORMALITIES
IN MYELOMATOSIS"HERMAN A. LAWSON, M.D., of Providence, Rhode Island
(Chief of Medical Service, Veterans Administration Hospital, Providence)

2:30 P.M. "DIAGNOSTIC SIGNIFICANCE OF A LUMP IN THE NECK"HAYES MARTIN, M.D., of New York City
(Attending Surgeon, Memorial Hospital; Associate Professor of Clinical Sur-
gery, Cornell Medical College, New York)

3:00 P.M. "CRITIQUE OF NEW DRUGS"DALE G. FRIEND, M.D., of Boston, Massachusetts
(Associate Professor of Medicine, Harvard Medical School)

3:30-4:00 P.M. INTERMISSION TO VISIT TECHNICAL EXHIBITS

4:00 P.M. "THE USE AND ABUSE OF HORMONE THERAPY"SOMERS H. STURGIS, M.D., of Boston, Massachusetts
(Surgeon [Gynecology], Peter Bent Brigham Hospital; Associate Clinical Pro-
fessor of Gynecology, Harvard Medical School)

4:30 P.M. PRESIDENTIAL ADDRESSHENRI E. GAUTHIER, M.D., of Woonsocket, Rhode Island
(President, Rhode Island Medical Society)

5:00 P.M. GENERAL SESSION OF THE SOCIETY

INSTALLATION OF OFFICERS FOR 1955-56

5:30-6:30 P.M. TOUR OF TECHNICAL EXHIBITS*continued on page 224*

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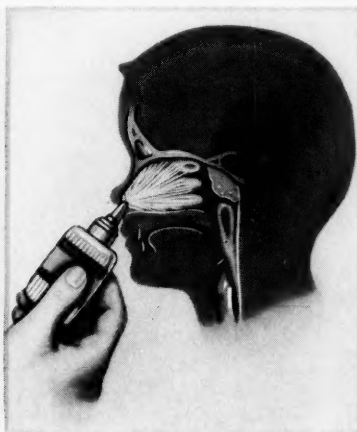
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Reference to RHINALGAN:

1. Van Alyea, O. E., and Donnelly, W. A.: E.E.N.&T. Monthly, 31, Nov. 1952.
2. Fox, S. L.: AMA Arch. Otolaryn., 53, 607-609, 1951.
3. Molamut, N., and Harber, A.: N.Y. Phys., 34, 14-18, 1950.
4. Lett, J. E., (Lt. Col. MC-USAF) Research Report, Dept. Otolaryn., USAF School Aviat. Med., 1952.
5. Hamilton, W. F., and Turnbull, F. M.: J. Amer. Pharm. Ass'n., 7, 378-382, 1950.
6. Browd, Victor L.: Rehabilitation of Hearing, 1950.
7. Kugelmass, I. Newton: Handbook of the Common Acute Infectious Diseases, 1949.



EVENING SESSION

7:30-8:30 P.M. REGISTRATION AND TOUR OF TECHNICAL EXHIBITS

8:30 P.M. "CRYPTORCHIDISM"

CHARLES HIGGINS, M.D., of Cleveland, Ohio

(Head of Department of Urology, Cleveland Clinic; Past President of American Urological Association)

9:00 P.M. CHARLES V. CHAPIN ORATION — "THE GROWTH OF POLIOMYELITIS VIRUS IN TISSUE CULTURE: APPLICATIONS TO DIAGNOSIS AND PREVENTION OF POLIOMYELITIS"

JOHN F. ENDERS, Ph.D., of Boston, Massachusetts

(Chief, Research Division of Infectious Diseases, Children's Medical Center, Boston; Associate Professor of Bacteriology and Immunology, Harvard Medical School; Recipient of Passano Award 1953, Lasker Award 1954, Kimble Methodology Research Award 1954, Nobel Prize in Physiology and Medicine 1954)

10:00 P.M. RECESS AND TOUR OF EXHIBITS

THURSDAY, MAY 5

2:00 P.M. CALL TO ORDER, *President*, HENRI E. GAUTHIER, M.D.
RECOGNITION OF DELEGATES FROM OTHER SOCIETIES

2:15 P.M. "THE MANAGEMENT OF CHILDREN WITH ABDOMINAL PAIN"

JAMES MARVIN BATY, M.D., of Boston, Massachusetts

(Professor of Pediatrics, Tufts College Medical School; Physician-in-Chief, The Boston Floating Hospital)

ORVAR SWENSON, M.D., of Boston, Massachusetts

(Clinical Professor of Pediatric Surgery, Tufts College Medical School; Surgeon-in-Chief, The Boston Floating Hospital for Infants and Children)

CARROLL A. BERMAN, M.D., of Boston, Massachusetts

(Clinical Instructor in Radiology, Tufts College Medical School; Roentgenologist, The Boston Floating Hospital)

3:15-3:45 P.M. INTERMISSION TO VISIT TECHNICAL EXHIBITS

3:45 P.M. "PROGRESS NOTES ON THE SURGERY OF ACQUIRED HEART DISEASE"

DWIGHT E. HARKEN, M.D., of Boston, Massachusetts

(Associate Clinical Professor of Surgery, Harvard Medical School; Surgeon, Peter Bent Brigham Hospital; Chief of Thoracic Surgery, Mt. Auburn Hospital, Boston)

from an editorial in the J.A.M.A.
(156:991, Nov. 6, 1954):

Oral broad spectrum antibiotic therapy
may cause infection with *Candida albicans*

A new concept in antibiotic therapy

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4:15 P.M. "NEGLECTED ASPECTS OF THE TONGUE IN MEDICAL PRACTICE"

WILLIAM B. BEAN, M.D., of Iowa City, Iowa

(Professor of Medicine, Head of Department of Internal Medicine, State University of Iowa College of Medicine; Senior Medical Consultant of the Veterans Administration, Iowa City)

6:00-7:00 P.M. RECEPTION . . . At the Narragansett Hotel

(For members of the Society and their guests)

7:00 P.M. DINNER . . . At the Narragansett Hotel

(For members of the Society and their guests)

9:00 P.M. Anniversary Chairman: ORLAND F. SMITH, M.D.

(Treasurer, Rhode Island Medical Society Physicians Service; Chief of Surgical Service, Pawtucket Memorial Hospital)

Greetings

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Governor of the State of Rhode Island

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HEALTH EDUCATION BROADCASTS

Radio station WPRO initiated on March 19, the series of health education broadcasts prepared by the American Medical Association on problems of adolescence. The programs are broadcast on Saturdays at 3:45 P.M. Programs on "Health in the Summer" will be broadcast during June, July and August, and a new series on school health will be presented in the fall months. These series of health education programs are being presented by WPRO in cooperation with the Providence Medical Association through its committee on public relations.

IF YOU DRIVE TO ATLANTIC CITY

With the annual sessions of the American Medical Association scheduled for Atlantic City this June 5-10, many physicians from Rhode Island will undoubtedly plan to motor to the famous New Jersey shore resort. We are advised that the best route is to cross the George Washington bridge at New York and take the New Jersey turnpike.

At Interchange No. 11 on the Jersey turnpike enter the Garden State Parkway which is the new scenic highway along the coastal plain. Driving time from New York is reported to be a little over two hours.

Meat...

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For many years clinicians and surgeons have recognized the therapeutic value of the high protein dietary.

In more than normal amounts, protein is essential in the treatment of many diseases characterized by hypoproteinemia¹—nephrosis,² sprue, pellagra, chronic colitis, certain liver afflictions,³ anorexia of diverse etiologies. High protein intake helps to stabilize tissue protein in diseases in which protein catabolism is increased, such as hyperthyroidism and protracted high fever. Dietaries high in protein promote wound healing in the surgical patient and speed convalescence.⁴ Sufficient protein ingestion constitutes a protective measure in the geriatric patient.⁵ Large amounts of protein are required to satisfy the growth and other metabolic needs of the pediatric patient.

Meat provides large quantities of protein highly effective in the body economy—tissue growth and maintenance, formation of antibodies, enzymes, and protein hormones, and regulation of fluid balance. It also supplies valuable amounts of B vitamins and essential minerals including iron, phosphorus, and potassium. Appeal to the palate, easy digestibility, and its nutrient contribution make meat an important component of therapeutic diets.

1. Taggart, H. A.: Protein Metabolism in Relation to Nutritional Aspects of Medical Diseases, Pennsylvania M.J. 54:339 (1951).
2. Marquardt, G. H.; Cummins, G. M., and Fisher, C. I.: Blood Protein Replenishment in Treatment of Nephritic Edema, Quart. Bull. Northwestern Univ. M. School 26:140 (1952).
3. Kark, R. M.: Low Sodium and High Protein Diets in Laennec's Cirrhosis, M. Clin. North America 35:73 (1951).
4. Kekwick, A.: Protein Deficiency in Surgical Patients, Ann. Roy. Coll. Surgeons England 7:390 (1950).
5. Stieglitz, E. J.: Nutrition Problems of Geriatric Medicine, Report of Council on Foods and Nutrition, J.A.M.A. 142:1070 (Apr. 8) 1950.

The Seal of Acceptance denotes that the nutritional statements made in this advertisement are acceptable to the Council on Foods and Nutrition of the American Medical Association.



American Meat Institute
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DISTRICT MEDICAL SOCIETY MEETINGS

PROVIDENCE MEDICAL ASSOCIATION

A regular meeting of the Providence Medical Association was held at the Medical Library on Monday, February 7, 1955. In the absence of the president, the meeting was called to order by Doctor Robert R. Baldrige, Vice President, at 8:30 P.M.

Minutes of Previous Meeting

The minutes of the previous meeting were omitted as they were published in the RHODE ISLAND MEDICAL JOURNAL.

Announcements by Vice President

Doctor Baldrige called to the attention of the members the Eastern Regional Meeting of the American College of Surgeons to be held in Providence on March 3, 4 and 5, and the meeting scheduled on Monday, March 7, of the Providence Medical Association at which Doctor Frank Dickinson, Director of the Bureau of Economic Research of the American Medical Association, would speak.

Death of Doctor J. Joseph Hoey

Doctor Baldrige noted with regret the death of Doctor J. Joseph Hoey, a practicing physician in Providence for forty-four years, and he noted that a committee to prepare the Association's tribute to Doctor Hoey would be named by Doctor Chafee.

Scientific Program

Doctor Baldrige introduced Doctor John M. Loré, Jr., of New York City, Surgical Staff, Department of Surgery, and Surgical Research Laboratories at St. Clare's Hospital in New York City, who spoke on "The Pathogenesis of Ascites and a Consideration of Natural Occurring Porto-Caval Shunts."

Doctor Loré gave a very illuminating and provocative talk on this most interesting subject. His talk was supplemented by the use of excellent koda-chrome slides. He injected colored liquid latex into his pathological specimens which were later photographed to illustrate the greater part of his talk.

He stated that ascites was due to an intrahepatic portal block. In other words, it is due to a primary diffuse blockage of the outflow tract of the liver, namely the hepatic veins.

Doctor Loré's investigations have convinced him that portal blockage is merely secondary in the presence of ascites. There was a big question in the speaker's mind after all of his investigations, whether or not spleno-renal and porto-caval shunts are of much value.

A very interesting discussion followed Doctor Loré's talk.

The meeting adjourned at 10:00 P.M.

Collation was served.

Attendance was 87.

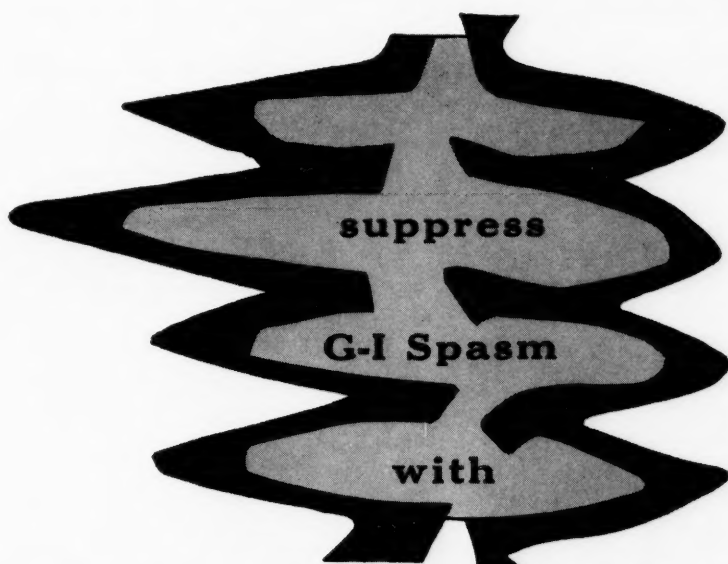
Respectfully submitted,

MICHAEL DiMAIO, M.D., *Secretary*



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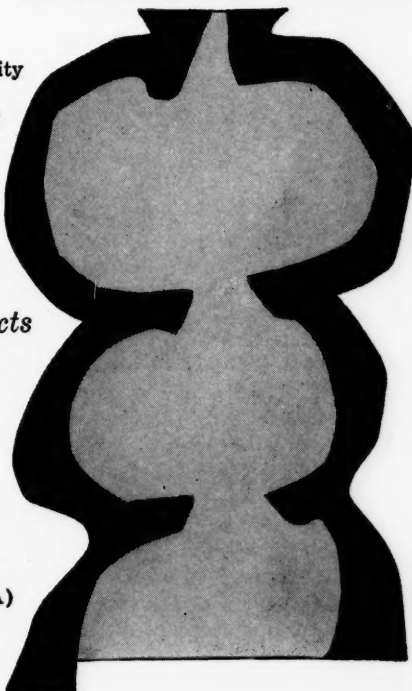
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Fellows of the Rhode Island Medical Society are reminded that they now have the privilege of borrowing books from the Davenport Collection, our interesting collection of volumes by and about physicians. These include fiction, biographies, travel, poetry and history. There have been several recent "best sellers" added and some of the new titles are listed below:

Otho T. Beall, Jr. and Richard H. Shryock—Cotton Mather: First Significant Figure in American Medicine. Publications of the Institute of the History of Medicine, First Series: Monographs, Volume V. Johns Hopkins Press, Balt., 1954. The authors of this new biography feel that too much emphasis has been placed on Cotton Mather, theologian, and too little on Cotton Mather, physician. They discuss his contributions to medicine and have included selected sections from *The Angel of Bethesda*, Mather's unpublished textbook of medicine. The Library has two Mather titles in its rare book collection.

Estelle Brodman—The Development of Medical Bibliography. Medical Library Association, Publication No. 1. Balt., 1954. This is particularly a librarian's book but should interest any physician who likes to look up his own references. The most important works in the history of medical bibliography are discussed thoroughly; lesser works are listed in the appendix.

Jeremiah S. Finch—Sir Thomas Browne. A Doctor's Life of Science & Faith. Henry Schuman, N. Y., 1950. In 1642, a general practitioner in Norwich England, wrote a "best seller"—*Religio Medici*. This small book is still popular and its author still a favorite subject for biographers. Dr. Finch is an authority on Sir Thomas Browne.

Benjamin Franklin—Some Account of the Pennsylvania Hospital. Originally published by B. Franklin & D. Hall, Philadelphia, 1754. Printed in facsimile, with introduction by I. Bernard Cohen. Publications of Institute of History of Medicine, fourth series, *Bibliotheca medica americana*, volume VI. Johns Hopkins Press, Balt., 1954.

Joseph Garland, M.D.—All Creatures Here Below. Houghton Mifflin Co., Bost., 1954. The jacket says "Ages 9-12" but this delightful little book has appeal for an older audience as well. Rene Martin's illustrations are fine.

John Jennings—Banners Against the Wind. Little, Brown & Co., Bost., \$3.75. This is a biographical novel about Samuel Gridley Howe, M.D. covering the first years of his medical career, when he served as a doctor in the Greek war for independence against the Turks, up to the time of his marriage to Julia Ward.

Robert B. Robertson, M.D.—Of Whales and Men. Alfred A. Knopf, N. Y., 1954. This is a fascinating account of a modern whaling expedition. Dr. Robertson served as senior medical officer to the expedition and the tale of his experiences makes exciting reading. Today's whaling ship is a factory, but the whaling men seem not to have changed a great deal since the days of Herman Melville.

Henry E. Sigerist, M.D.—Man and Medicine. An Introduction to Medical Knowledge. Introduction by Dr. William H. Welch. Translated by Margaret Galt Boise. W. W. Norton & Co., Inc., N. Y., 1932. This was written for laymen, especially for the young person contemplating the study of medicine. Morton Thompson—Not as a Stranger. Charles Scribner's Sons, N. Y., 1954. This story of the making of a doctor has headed reading lists for many months.

William Carlos Williams, M.D.—The Desert Music. Random House, N. Y., 1954. Dr. Williams, in spite of a busy life as a practicing physician, has found time to win many of the major prizes for poetry and to become one of our most important literary figures.

Recent Day Fund purchases are:

Maude E. Abbott—Atlas of Congenital Cardiac Disease. Originally published by the American Heart Association, N. Y., 1936. Facsimile of the original edition, printed 1954.

Jesse E. Edwards et al—An Atlas of Congenital Anomalies of the Heart and Great Vessels. Charles C. Thomas, Springfield, Ill., 1954.

Joseph Fletcher—Morals and Medicine. The Moral Problems of: The Patient's Right to Know the Truth, Contraception, Artificial Insemination, Sterilization, Euthanasia. Princeton University Press, Princeton, 1954.

Joseph Garland, editor—The Physician and His Practice. Little, Brown and Co., Bost., 1954.

Henry Gray—Anatomy of the Human Body. Ed-

continued on page 232

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continued from page 230

ited by Charles Mayo Goss. 26th ed. Lea & Febiger, Phil., 1954.

J. P. Greenhill—Office Gynecology. 6th ed. Year Book Publishers, Inc., Chic., 1954.

Handbooks of operative surgery:

R. H. Flocks and David Culp—Surgical Urology. Year Book Publishers, Inc., Chic., 1954.

J. P. Greenhill—Surgical Gynecology Including Important Obstetric Operations. Year Book Publishers, Inc., Chic., 1952.

Julian Johnson and Charles K. Kirby—Surgery of the Chest. Year Book Publishers, Inc., Chic., 1952.

Charles B. Puestow—Surgery of the Biliary Tract, Pancreas & Spleen. Year Book Publishers, Inc., Chic., 1953.

Claude E. Welch—Surgery of the Stomach & Duodenum. Year Book Publishers, Inc., Chic., 1952.

Eddy D. Palmer—The Esophagus and Its Diseases. Paul B. Hoeber, Inc., N. Y., 1952.

E. A. Spiegel, editor—Progress in Neurology and Psychiatry. An Annual Review. Volume IX. Grune & Stratton, N. Y., 1954.

Year Book of General Surgery (1954-1955 Year Book Series). Edited by Evarts A. Graham. With a Section on Anesthesia Edited by Stuart C. Cullen. The Year Book Publishers, Chic., 1954.

Year Book of Radiology (1954-1955 Year Book Series). Radiologic Diagnosis Edited by John Floyd Holt and Fred Jenner Hodges. Radiation Therapy Edited by Harold W. Jacox and Morton M. Kligerman. The Year Book Publishers, Inc., Chic., 1954.

Review volumes received from the Rhode Island Medical Journal were:

George Clinton Andrews—Diseases of the Skin for Practitioners and Students. 4th ed. W. B. Saunders Company, Phil., 1954.

J. Englebert Dunphy and Thomas W. Botsford—Physical Examination of the Surgical Patient. W. B. Saunders Company, Phil., 1953.

Ed Kilman and Theon Wright—Hugh Roy Cullen. A Story of American Opportunity. Prentice-Hall, Inc., N. Y., 1954.

Surgical Forum. Proceedings of the Forum Sessions, Thirty-ninth Clinical Congress of the American College of Surgeons, Chicago, Illinois, October, 1953. W. B. Saunders Company, Phil., 1954.

Gifts—we have received the following items from the Fellows of the Society:

Dr. Howard E. Blanchard: forty-seven textbooks. Dr. Peter Pineo Chase: eighteen textbooks and three paintings illustrating "Pain."

Dr. Frank W. Dimmitt: Transactions of the American Academy of Ophthalmology and Otolaryngology, 39th—44th, 1934-39.

Dr. Roland Hammond: medical journals and Samuel Raynor Meaker—A Doctor Talks to Women. Simon and Schuster, N. Y., 1954.

Dr. A. Lloyd Lagerquist: medical journals.

Dr. Ira H. Noyes: An Abridgement of the Practice of Midwifery: and a Set of Anatomical Tables With Explanations. Collected from the Works of the Celebrated William Smellie. Bost., 1786. This book was given to Doctor Noyes by Dr. James H. Davenport. We are pleased that Doctor Noyes saw fit to give it to the Library.

Dr. H. G. Partridge: a framed letter from Lawson Tait, M.D. to H. R. Brown, M.D. and

Felix Flügel—A Dictionary of the English and German Languages for Home and School. Edited by Prof. Im. Schmidt and G. Tanger. Brunswick, 1901.

Dr. F. Ronchese: medical journals and pamphlets and

The School of Salernum. Regimen Sanitatis Salerni. The English Version by Sir John Harington. Ente Provinciale per il Turismo, Salerno.

Atti XI Congresso Internazionale di Medicina del Lavoro, Napoli 13-19 Settembre 1954. Volume Primo. Napoli, 1954.

Dr. Florence M. Ross: medical journals.

Gifts from non-members include:

American Cancer Society, Inc.: Committee on Growth of the National Academy of Sciences—National Research Council. Eighth Annual Report to the American Cancer Society, Inc. July 1952-June 1953. Wash., (1954).

Fourth Report on Institutional Research Grants of the American Cancer Society. September, 1952-August, 1953. N. Y., 1954.

American Medical Association: County Medical Public Relations Manual. Chic.

Association of American Physicians: Transactions of the Association of American Physicians, vol. 67, 1954.

Professor Robert T. Beyer: copies of Acta Otolaryngologica, Excerpta Medica Section XI, and Journal of Speech and Hearing Disorders.

Rabbi William G. Braude: six textbooks.

Fremont Research Foundation, Inc.: John E. Gregory—Pathogenesis of Cancer. 2nd ed. Pasadena, 1952.

Markle Foundation: 1953-54 Annual Report of the John and Mary R. Markle Foundation. N. Y., 1954.

Miriam Hospital: six volumes of Science. Nutrition Foundation: Report of the Scientific Director of The Nutrition Foundation, Inc. N. Y., 1954.

Mrs. E. H. Paine: three textbooks and ten diplomas from the estate of John Combe Pegram, Jr.

St. Joseph's Hospital: H. Morriston Davies—Surgery of the Lung and Pleura. Lond., 1930.

concluded on page 235

ON THE MEDICAL LIBRARY BOOKSHELVES

concluded from page 232

Mr. Morton Saunders, Ciba Pharmaceutical Products, Inc.: *The Rauwolfia Story. From Primitive Medicine to Alkaloidal Therapy.* Summit, N. J., 1954. 2 copies.

Miss M. A. Terpany: twenty-one textbooks and pamphlets.

Veterans Administration Hospital: several volumes of medical journals and a copy of *Books in Print* 1953.

Books received through exchange

We have an agreement with the University Library, Lund, Sweden to receive copies of their medical theses in exchange for our Rhode Island Medical Journal. The following titles have been sent to us:

Erik Akerlund—*A Study in Acute Head Injuries Examined with Flicker Fusion Determined under the Influence of Evipan.* Stockholm, 1953.

David Berezin—*Pelvic Insufficiency During Pregnancy and After Parturition.* Lund, 1954.

Nils Bergh—*Clinical and Experimental Studies in Myasthenia Gravis.* Lund, 1953.

Karl Gustav Dahlgren—*On Suicide and Attempted Suicide. A Psychiatric and Statistical Investigation.* Lund, 1945.

Gunnar Engleson—*Studies in Diabetes Mellitus.* Lund, 1954.

Rune Grubb—*Some Aspects of the Complexity of the Human ABO Blood Groups.* Copenhagen, 1949.

Henry Jedberg—*A Study on Genital Tuberculosis in Women.* Lund, 1950.

Ivar Nilsby—*Non-bacterial Meningo-encephalitis in Children with Special Reference to Spontaneous Post-catarrhal and Varicella Meningo-encephalitis.* Lund, 1953.

Stig Radner—*Vertebral Angiography by Catheterization. A New Method Employed in 221 Cases.* Lund, 1951.

Gerd Wretmark—*The Peptic Ulcer Individual. A Study in Heredity, Physique, and Personality.* Copenhagen, 1953.

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BOOK REVIEWS

FUNDAMENTALS OF ANESTHESIA. Prepared under the Editorial Direction of the Consultant Committee for Revision of Fundamentals of Anesthesia, a publication of the Council on Pharmacy and Chemistry of the American Medical Association. Third edition. W. B. Saunders Company, Phil., 1954. \$6.00

This is the third, and by far the best of the deservedly popular AMA publications titled *FUNDAMENTALS OF ANESTHESIA*. In its original edition, this monograph was intended chiefly for the use of medical officers of the Armed Forces; for their basic instruction in anesthetic techniques and for proper handling of depressed states of the circulation and respiration.

So admirably did the initial volume fill these requirements that it became very popular as a teaching text and reference manual for internes and residents.

In this third edition, the book has been greatly enlarged. Its format has been changed, the material expanded and rearranged, and the various subject headings so exhaustively treated that it has now become a very valuable general reference work for those interested in almost any phase of anesthesiology.

The Committee, composed of outstanding authorities in their respective fields, has done a splendid job in condensing an enormous volume of information into 279 pages. Printing and illustrations are excellent and the book is well indexed.

FUNDAMENTALS OF ANESTHESIA is highly recommended to medical students, residents in anesthesia, part-time or full-time anesthesiologists and all other medical practitioners who might occasionally require a condensed, highly accurate and very authoritative reference work on that most fascinating of specialties, anesthesia.

HARRY E. DARRAH, M.D.

PRACTICE OF ALLERGY, by Warren T. Vaughan, M.D. Revised by J. Harvey Black, M.D. The C. V. Mosby Co., St. Louis, 1954. \$21

PRACTICE OF ALLERGY was first written by Dr. Vaughan about fifteen years ago. A second edition followed five years later and the present volume is the third edition. This volume was extensively re-

vised by J. Harvey Black who brought it up to date. This book was hailed widely from the very beginning, and its popularity continues to increase with the passage of time.

Specialists, practitioners and students will find this book complete in every respect. It will serve as an excellent reference book as well as to give complete information on a vast number of allergic subjects. The book is well organized, and is divided into sixteen parts. In Part 1 the authors present numerous historical references leading to our present understanding of clinical allergy. Then come six chapters on the characteristics of clinical allergy, and two chapters on the physiology of allergy. The diagnosis of specific sensitivities is thoroughly discussed in twelve separate chapters. The entire list of subjects is too long to enumerate in detail.

The latest information on pollen surveys and pollen counting is presented by Oren C. Durham. Mold allergy is brought up to date by Dr. James B. Howell. A very important new chapter on pulmonary function is added for the first time to the third edition.

Food allergy is treated most admirably. In addition to the presentation of available knowledge on this subject, there are excellent practical chapters on trial diets, with extensive lists of menus and recipes. For those patients who are obliged to avoid certain allergenic foods, abundant lists of substitute foods are provided, so that they may be assured of an adequate dietary program. Other worthwhile features in this book are too numerous to describe in this review. For those who have an interest in the field of allergy this book is heartily recommended.

STANLEY S. FREEDMAN, M.D.

UROLOGY. Edited by Meredith Campbell, M.D. Vols. I, II and III. W. B. Saunders Company, Phil., 1954. \$60.00

Dr. Campbell, with the collaboration of fifty-one other authorities in urology, has edited a three-volume classic on modern urology.

The subject matter is comprehensively brought up to present day concepts.

The contents are well organized, with the first volume introducing a detailed account of the anatomy and physiology of the G.U. system. The prin-

ciples of diagnosis are then discussed and correlated with the anatomy and physiology. The remainder of the first volume covers pathology of urinary tract obstruction, anomalies of the urogenital tract, infections of the urogenital tract, infertility in the male, and urinary lithiasis. The section on the anomalies of the urogenital tract gives a clear and concise correlation between the embryology and the anomalies that are encountered in the child and adult.

The second volume covers injuries, tumors, neuromuscular diseases of the urinary tract, urology in the female, and urology in infancy and childhood. The section on tumors of the urogenital tract gives the most complete and detailed descriptions of these entities that can be found in any urology text. The chapters on traumatic injuries of the urogenital tract is noteworthy for it gives an excellent discussion of the diagnosis and treatment of these problems when they are encountered. The portion that is devoted to ruptured bladders and urethras gives an excellent description, supplemented with diagrams, of the various sites where injury may occur in the lower portion of the G.U. tract.

Volume three is devoted almost entirely to methods and procedures of urologic surgery. The final section of the volume is devoted to the diagnosis and treatment of medical diseases of the kidney, and the physiology and treatment of disturbances of the adrenal gland.

These up-to-date and complete volumes on urology would be of advantage to any physician as a reference even though he is not practicing urology. It is highly recommended to the urologist as an up-to-date text.

VINCENT I. MACANDREW, M.D.

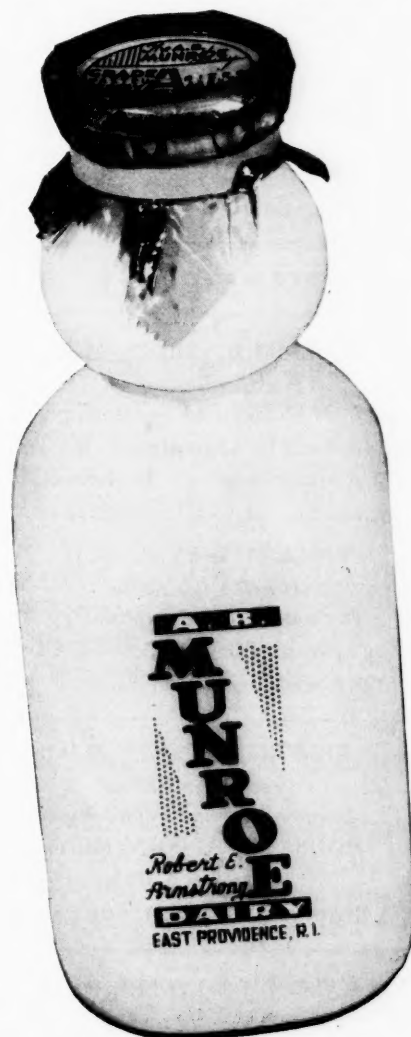
DISEASES OF THE SKIN: FOR PRACTITIONERS AND STUDENTS by George Clinton Andrews, M.D. W. B. Saunders Company, Philadelphia, 1954. 4th ed. \$13.00

This latest edition of Andrews' text on diseases of the skin has certain qualities which will appeal to many readers, but has others which the reviewer found leave it open to criticism.

The book commences with a brief consideration of the anatomy and pathology of the skin. The remaining pages are devoted to a chapter on symptomatology and general diagnosis, three chapters on radiation physics and therapy, one on surgical diathermy and thirty-two chapters on the diagnosis and treatment of diseases of the skin. The material is presented clearly and in interesting fashion and brings the older edition up to date in regard to such things as the cyclic nature of hair growth, the biochemistry of melanin formation, new stains, porphyria, industrial dermatoses, and advances in therapy. The print is clear, the paper excellent and the photographs, in general, are very good.

concluded on page 240

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	PAGE
American Meat Institute.....	227
Ames Company	190
E. P. Anthony.....	213
Ayerst McKenna	231
Baker Laboratories	200
J. E. Brennan	226
Brewer Inc.	195
Butterfield Drug	234
Ciba Pharmaceutical Products.....	202, 221, 229
Coca-Cola	186
Curran & Burton.....	186
Davis & Davis	235
Derosier Agency	182
Desitin Chemical Corporation.....	196
Doho Chemical Corporation.....	223
Duffy My Druggist.....	226
Endo Products	197
Fellows Medical Mfg.	194
Fuller Memorial Sanitarium.....	186
Hillside Farms	182
H. P. Hood.....	198
J. S. Inskip, Inc.	182
Eli Lilly	Front Cover
Mead Johnson.....	Back Cover
Medical Bureau	234
Munroe Dairy	237
Nestle Company	192
Parke Davis.....	Inside Front Cover and 181
Chas. Pfizer	184, 185
Physicians Directory	238, 239
Physicians Service	188
Wm. P. Poythress	187
Sealy Mattress	220
G. D. Searle	219
Sherman Laboratories.....	199 and Third Cover
Smith, Kline & French.....	201
E. R. Squibb	225
Upjohn Company	183, 191
U. S. Vitamin	233
Johnnie Walker	234
Warwick Club Beverages.....	228
Winthrop Stearns	193

BOOK REVIEWS

concluded from page 237

Criticism might be made of the occasional recommendation of a form of therapy only recently introduced and not as yet generally accepted. As an example might be cited the author's recommendation of vitamin B₁₂ in the treatment of psoriasis, a form of therapy which in the reviewer's small series of cases has proven to be of little value. In regard to the management of hemangiomas, Andrews states that spontaneous involution is usually incomplete and accompanied by more scar formation than would result from proper therapy. Such a statement would be strongly contested by many well-trained and experienced dermatologists who believe that spontaneous involution frequently occurs and with excellent cosmetic results, and that observation alone is indicated in many cases. One might also question the statement that post mortem examination of patients with Kaposi's sarcoma usually reveals visceral involvement.

Perhaps the greatest objection to this textbook, in the opinion of the reviewer, is that it is neither a short, concise work which would be of value to the non-dermatologist and student, nor a lengthy and complete text which would be of value primarily to the dermatologist. It represents what perhaps might be considered a compromise. For those who prefer neither the short nor the long this text of Andrews can be recommended.

ARTHUR B. KERN, M.D.

REVIEW OF MEDICAL MICROBIOLOGY

by Ernest Jawetz, M.D., Joseph L. Melnick, Ph.D., and Edward A. Adelberg, Ph.D., Lange Medical Publications, Los Altos, California, 1954. \$4.50

There has been a definite need for a brief, accurate and current review of the various phases of medical microbiology, particularly those concerned with clinical infections and chemotherapy. The book fulfills the need well. The subject matter covers medical bacteriology, medical mycology, serologic procedures, and there is an adequate and up-to-date coverage of the virus and rickettsial agents of disease, a field that is continually changing in concept and technique. A considerable portion of this review is devoted to a discussion of basic science, and this is a definite advantage to students in microbiology courses, student technologists, and the medical student who is preparing for board examinations. However, the review is directed primarily at the physician by stressing the clinical and chemotherapeutic aspects of medical microbiology.

A shortcoming that soon becomes apparent on reading this review is the failure to include references to the original literature and especially cur-

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rent sources of information at the end of each chapter so that the student, and especially the professional microbiologists might readily find a more detailed discussion of a given subject. The publishers have indicated that a new edition will be published every two years. This will be welcome to a field that is continually changing, and especially welcome would be references to the interim literature.

RAYMOND M. YOUNG, Ph.D.

SURGERY OF THE PANCREAS by Richard B. Cattell, M.D., and Kenneth W. Warren, M.D. W. B. Saunders Company, Phil., 1953. \$10.00

A book of 374 pages which was released several months ago. It is a most comprehensive volume, covering the anatomy and physiology in minute detail. Congenital malformation and infection, both acute and chronic, are dealt with in a liberal manner. The surgical diseases include cysts and their classification, pancreatic injuries, islet cell adenomas and hyperinsulinism, and are discussed in detail. Malignancy is treated by itself with an interesting chapter on all of the details, including technique of the various operations. The book is based on experiences with over 1,000 patients with surgical disease of the pancreas treated at the Lahey Clinic. It contains 100 illustrated figures of X ray, surgical specimens, anatomical drawings and photographs.

SURGERY OF THE PANCREAS is an important addition to the library of any surgeon who operates in the upper right quadrant.

O. F. SMITH, M.D.

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